

A Profile of Health Among Massachusetts Adults, 1998

Results from the Behavioral Risk Factor Surveillance System

***CHRONIC DISEASE SURVEILLANCE PROGRAM ♦
BUREAU OF HEALTH STATISTICS, RESEARCH, AND EVALUATION ♦
MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH***

July 2000

Massachusetts Department of Public Health

Chronic Disease Surveillance Program
Bureau of Health Statistics, Research, and Evaluation

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July 2000

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EXECUTIVE SUMMARY

A Profile of Health Among Massachusetts Adults, 1998 reports on the results of the 1998 Massachusetts Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS collects information from a sample of Massachusetts residents on a wide variety of health issues and is an important source of information about the prevalence of risk factors that contribute to premature death, illness and disability among Massachusetts residents. The information obtained in this survey assists in identifying the need for health interventions, monitoring the effectiveness of existing programs, and developing health policy and legislation. In 1998, 4,944 interviews were conducted among Massachusetts adults 18 and older. Presented below are some of the highlights from the 1998 Massachusetts BRFSS.

OVERALL HEALTH MEASURES

Health Status

About one in ten Massachusetts adults described their health as fair or poor. Hispanics, older adults, adults with lower levels of education or income, and adults unable to work were more likely to have reported fair or poor health. Compared to other states, Massachusetts had the 3rd lowest prevalence of adults in fair or poor health.

Nine percent of adults reported experiencing poor mental health on 15 or more days in the previous month. Younger adults, and those with lower income or education were more likely to have experienced poor mental health. Nine percent of adults did not participate in their usual activities for more than half of the month because of limitations by poor mental or physical health. Similar to those who described their health as fair or poor, Hispanics, older adults, adults with lower levels of education or income, and adults unable to work were more likely to have reported limitations in participating in their usual activities due to health concerns.

Quality of Life

More than six percent of Massachusetts adults said that they felt sad or depressed for 15 or more days in the previous month. A similar percent reported that pain limited activities for more than half of the previous month. Adults in the lowest income group and those out of work were more likely to report feeling depressed and were more likely to be limited by pain. Hispanics and adults with lower education were also more likely to report feeling depressed. Almost eleven percent of adults age 75 and older were limited by pain for more than half of the month.

Three fourths of all adults reported feeling very healthy and full of energy for more than half of the previous month. Adults 75 and older or with less than a high school education were less likely to feel healthy. Adults who are unable to work were much less likely to feel healthy.

ACCESS AND UTILIZATION

Health Access and Utilization

Nine percent of Massachusetts adults were currently without health insurance. Age, education and income were all inversely associated with being uninsured. Blacks and Hispanics were also more likely to be without health insurance. Compared to other states in 1998, Massachusetts had the sixth lowest percent of uninsured adults. There has been little change in the percent of Massachusetts adults without health insurance since 1993. Approximately eight percent of adults were unable to see a doctor in the previous year because of cost. Cost prevented a greater percent of younger adults, adults with lower levels of education or household income, and Hispanics from seeing a doctor.

Over three-quarters of adults had a yearly routine checkup in 1998. Women and Blacks were more likely to have had a regular checkup. Education and income did not predict whether a person had an annual checkup. The percent of adults who had a routine checkup has increased substantially since 1986.

Dental Health, Access and Utilization

Over 78% of Massachusetts adults had been to the dentist in the past year and 38% reported having no dental insurance. Older adults, those with less education and those with lower household income were less likely to have been to the dentist and less likely to have dental insurance.

Over 18% of adults were missing six or more teeth due to decay or gum disease. The percent of adults with six or more teeth missing increased sharply with age, and for adults with lower income and lower education. Whites were more likely than other races to have significant tooth loss.

HEALTH RISKS AND PREVENTIVE BEHAVIORS

Tobacco Use

In 1998, 21.1% of Massachusetts adults reported smoking cigarettes everyday or some days. The percent of adults who smoked decreased with increasing age. Socioeconomic status was strongly related to whether a person smoked: adults with lower levels of income or education, and adults who were out of work or unable to work were more likely to be current smokers. There has been a notable reduction in the percent of Massachusetts adults who currently smoke since 1986. Compared to other states, Massachusetts had the ninth lowest prevalence of current smokers.

An estimated 16% of adults smoked a cigar within the past year. Men were much more likely than women to have smoked a cigar. Younger adults, and adults in higher income or education groups were more likely to have smoked a cigar during this time period.

Physical Activity

In 1998, 74% of Massachusetts adults participated in any leisure time physical activity in the previous month, while 30% participated in regular physical activity. There were marked differences in the percent of adults who participated in both measures of physical activity by income, education, race, employment and age. There have been small increases in the percent of adults who had any leisure time physical activity since 1986.

Weight Control

More than one-fourth of Massachusetts adults were overweight, based on body mass index (BMI) standards used in defining Healthy People 2000 (HP 2000) objectives. BMI is calculated by dividing weight in kilograms by height in meters squared. Men were more likely to be overweight than women and Asians were less likely to be overweight compared to other races. The percent of overweight adults increased until age 65, and then decreased. Overweight status was associated with education, but not income. A large percent of adults unable to work were overweight. Compared to other states, Massachusetts had the second lowest percent of adults who were overweight.

According to BMI standards adopted by Healthy People 2010 (HP 2010), approximately half of Massachusetts adults were classified as overweight in 1998. Compared to HP 2000 standards, the prevalence based on HP 2010 standards substantially increased across all demographic characteristics, although the overall associations remained. Based on HP 2010 standards, 14% of adults were classified very overweight. There

has been a considerable increase in the percent of Massachusetts residents classified as overweight and very overweight, based on both standards since 1986.

Fruit and Vegetable Consumption

In 1998, 31% of Massachusetts adults consumed 5 or more servings a day of fruits and vegetables, the amount that meets the Recommended Daily Allowance (RDA) standards. Women were more likely than men to meet the RDA guidelines. A higher percent of adults 65 and older ate sufficient fruits and vegetables. There was an increasing trend in sufficient fruit and vegetable consumption with increasing levels of education, but not with income. Compared to other states, Massachusetts had the second highest percent of adults who consumed sufficient fruits and vegetables.

HEALTH CONDITIONS

Chronic Diseases

In 1998, 14% of adults age 45 and older reported being told by a doctor that they had heart disease. The lifetime prevalence of heart disease was greater for men than women, increased significantly with increasing age, and was strongly related to socioeconomic indicators. Whites and Hispanics were more likely to have had heart disease than adults from other races.

Almost 4% of adults had diabetes. The prevalence of diabetes was higher among adults 45 and older, among adults with less than a high school education, and among those unable to work. Compared to other states, Massachusetts had the seventh lowest prevalence of diabetes.

Approximately 9% of Massachusetts adults were told by a doctor they had asthma. Asthma was highest in the 18-24 age group. The prevalence of asthma was not strongly related to income or education.

Osteoporosis

In 1998, over 12% of women age 45 and older reported having ever been told they had osteoporosis. The prevalence of osteoporosis increased considerably with increasing age.

More than 37% of all women obtained sufficient calcium through dairy or supplementation. Women age 45 and older were more likely to intake sufficient calcium than younger women. A smaller percent of Hispanic women obtained sufficient calcium compared to white women. Calcium intake increased with increasing education. Since 1994, the percent of women who intake sufficient calcium has increased substantially.

Disability and Activity Limitation

Approximately 17% of adults reported having a long-term disability or limitation of one year or more and almost 4% of all adults reported they had a long-term disability or limitation and required the help of others with routine activities or personal care. Older adults and those with less education or lower income were more likely to have a disability or limitation and also to have a disability or limitation and need help. Women were more likely than men to report a disability or limitation and to require help with routine activities or personal care.

WOMEN'S HEALTH

Breast Cancer Screening

In 1998, 92% of women age 40 and older had ever had a mammogram. Women of all races were equally likely to have ever received a mammography screening, and there was little relationship between socioeconomic indicators and mammography screening. Compared to other states, Massachusetts had the

second highest percent of women age 40 and older who ever had a mammogram. Since 1987, there has been a considerable increase in the percent of women age 40 and older who ever had a mammogram.

Almost 84% of women 50 and older received a mammogram within the past 2 years. Women with lower levels of income and education were less likely to have received a recent mammogram. Compared to other states, Massachusetts had the second highest percent of women 50 and older who had a recent mammogram. Since 1992, there has been a marked increase in the percent of women 50 and older receiving a recent mammogram.

Eighty three percent of women 18 and older had a clinical breast exam (CBE) in the previous 2 years. Women less than age 30 and more than age 70 were less likely to have a CBE during this time. The percent of women receiving a CBE increased with increasing education and income.

Cervical Cancer Screening

In 1998, 94% of women 18 and older had ever had a Pap smear. Women age 18-24 and Asian women were much less likely to have ever been screened. Over 88% of women without a hysterectomy received a Pap smear within the previous 3 years. The relationships between demographic characteristics and having a Pap smear within 3 years were similar to those who have ever had a Pap smear. Compared to other states, Massachusetts had the fourth highest percent of women who had a Pap Smear in the past three years.

Family Planning

In 1998, more than 72% of sexually active women between the ages of 18 and 44 used some form of birth control. Younger women were more likely to use birth control than older women. Among women currently pregnant or pregnant within the last 5 years, 31% said their pregnancy was unplanned. Women who were young, black, never married, or who had lower levels of income were more likely to say their pregnancy was unplanned.

ADDITIONAL TOPICS

HIV/AIDS

Seven percent of adults ages 18 to 64 characterized their risk of contracting HIV as medium to high. Adults ages 18 to 24 and adults with lower income were more likely to describe their risk as medium to high. Compared to other states, Massachusetts had the 40th lowest percent of adults who reported being at medium to high risk. More than 42% of adults ages 18 to 64 had ever been tested for HIV. A higher percent of males, adults 25 to 44, and blacks and Hispanics reported ever being tested. Almost 15% of adults ages 18 to 64 had an HIV test in the previous year. Females and males were equally likely to have been tested in the past year. The percent of adults tested in the past year decreased with increasing age, increasing household income, and increasing education. Since 1993, there has been a noteworthy increase in the percent of adults tested in the past year. Blacks and Hispanics were also more likely to have had a recent test.

Violence

Almost 5% of Massachusetts adults reported that they were physically hurt in the previous year. Males and adults 18-24 were more likely to have been hurt in the previous year. College graduates were less likely to report experiencing violence in the past year.

Six percent of women ages 18 to 59 reported experiencing intimate partner abuse in the past year, defined as physical violence, fear, or control by a spouse, live-in partner, or a date. Intimate partner abuse decreased with increasing age. A smaller percent of Asian women reported intimate partner violence, compared to other races.

SUMMARY OF 1998 BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM RESULTS

	1998 MASSACHUSETTS (%)	1998 NATIONAL MEDIAN (%)	1998 NATIONAL RANKING	HP 2000 OBJECTIVE (%)
OVERALL HEALTH MEASURES				
FAIR/POOR HEALTH	10.2	12.7	3 RD	
15+ DAYS POOR MENTAL HEALTH	9.1			
15+ DAYS ACTIVITIES LIMITED	8.9			
15+ DAYS DEPRESSED	6.2			
15+ DAYS PAIN	6.2			
15+ DAYS FULL OF ENERGY	72.5			
ACCESS AND UTILIZATION				
NO HEALTH INSURANCE	8.7	13.0	6 TH	
DID NOT SEE DOCTOR DUE TO COST	7.9			
CHECKUP IN PAST YEAR	77.6			
DENTAL VISIT IN PAST YEAR	78.5			
NO DENTAL INSURANCE	38.3			
6+ TEETH MISSING DUE TO DECAY	18.1			
RISK FACTORS / PREVENTIVE BEHAVIOR:				
CURRENT SMOKER	21.1	22.9	9 TH	15
CIGAR IN PAST YEAR	15.5			
ANY EXERCISE IN PAST MONTH	73.6	72.3	21 ST	85
REGULAR PHYSICAL ACTIVITY	30.2			
OVERWEIGHT (HP 2000)	26.3	32.4	2 ND	20
OVERWEIGHT (HP 2010)	50.1			
VERY OVERWEIGHT (HP 2010)	14.2			
5+ SERVINGS FRUIT /VEGETABLES	30.5	23.8	2 ND	50
HEALTH CONDITIONS				
HEART DISEASE, AGE 45+	13.7			
DIABETES	3.8	5.4	7 TH	
ASTHMA	8.9			
OSTEOPOROSIS, WOMEN AGE 45+	12.5			
SUFFICIENT CALCIUM, WOMEN	37.2			
DISABILITY OR LIMITATION	17.2			
DISABILITY THAT REQUIRES HELP	3.7			
WOMEN'S HEALTH				
MAMMOGRAM EVER, AGE 40+	91.6	84.7	2 ND	
MAMMOGRAM IN 2 YRS, AGE 50+	83.8	75.2	2 ND	
CLINICAL BREAST EXAM IN 2 YRS	82.5			
PAP SMEAR EVER	93.5	94.6	37 TH	95
PAP SMEAR IN 3 YRS	88.3	84.9	4 TH	
USE OF BIRTH CONTROL, AGE 18-44	72.3			
UNPLANNED PREGNANCY IN 5 YRS	30.9			
ADDITIONAL TOPICS				
HIGH/MEDIUM RISK OF HIV INFECTION	7.2	6.2	40 TH	
EVER TESTED FOR HIV	42.1			
TESTED FOR HIV IN PAST YEAR	14.6			
PHYSICALLY HURT IN PAST YEAR	4.9			
INTIMATE PARTNER ABUSE IN YEAR	6.0			

INTRODUCTION

WHAT IS THE BRFSS?

BRFSS collects data on a variety of health characteristics, risk factors for chronic conditions, and preventive behaviors.

The Behavioral Risk Factor Surveillance System (BRFSS) is a continuous, random-digit-dial, telephone survey of adults age 18 and older, and is conducted in all states as a joint collaboration between the Centers for Disease Control and Prevention (CDC) and State Departments of Health. The survey has been in the field in Massachusetts since 1986. The BRFSS collects data on a variety of health characteristics, risk factors for chronic conditions, and preventive behaviors. The information obtained in this survey assists in identifying the need for health interventions, monitoring the effectiveness of existing intervention and prevention programs, developing health policy and legislation, and measuring progress toward attaining state and national health objectives.

Each year the BRFSS includes a core set of questions that were developed by the CDC. In 1998, these questions pertained to health status, health care access and utilization, heart disease, diabetes, tobacco use, fruit and vegetable consumption, exercise, weight control, breast and cervical cancer screening, oral health, and HIV/AIDS. In addition to the core CDC questions, the Massachusetts BRFSS included several additional topics including disability/ limitations, osteoporosis, family planning, violence, asthma, and tobacco policy.

ABOUT THIS REPORT

This report summarizes selected results from the 1998 Massachusetts BRFSS. First, we present percent estimates of key core variables, by demographic characteristics. This section allows us to assess whether there are specific groups of adults who are at risk for chronic conditions or who are more likely to participate in healthy behaviors. It is important to note that these data are not adjusted for age or other differences across these characteristics. For example, adults who are retired may be more likely than students to report fair or poor health. However, age is a strong predictor of health status and retired adults are more likely to be older. In this instance, the differences noted by employment are more likely to be due to differences in age.

Following the core section, we compare the 1998 results to previous years' data for variables that have been measured in Massachusetts over time. This allows us to assess trends in specific characteristics of the population. Next, we compare Massachusetts results to national data and Healthy People 2000 Objectives*, wherever possible. For national comparisons, we provide the median* percent and the range of estimates for all fifty states, the District of Columbia, and Puerto Rico. We also provide a ranking of Massachusetts relative to other states, although this ranking does not take into account the degree of uncertainty of the estimates within each state due to sampling error. Rankings were based on the lowest risk or healthiest behavior, so that a rank of 1st = best and 50th = worst. For example, Massachusetts had the second lowest percent of adults who were overweight (rank = 2nd); it also had the second highest percent of women reporting having had a mammogram (rank = 2nd).

This report provides estimates for 1998 data, assesses trends over time, compares our state with U.S. data and Healthy People 2000 Objectives, and examines special topics.

Finally, we present special topics for several of the sections. These detailed analyses of the data allow us to go into more depth in several health areas. For some of the special topics, we combine 1998 data with previous years in order to increase stability of the estimates.

* see glossary

BRFSS METHODOLOGY

The Massachusetts BRFSS is a random-digit-dial (RDD) telephone survey of non-institutionalized Massachusetts adults residing in households with telephones, and in 1998 was conducted by Macro International, Inc. The sampling of the survey population involved a list-assisted, stratified RDD sampling frame, which assures that Massachusetts households with telephone numbers assigned after publication of the current directories, as well as households with deliberately unlisted numbers, are included in the sample in appropriate proportions. This methodology is designed to more efficiently and validly reach all telephone equipped households, and to provide population estimates of health conditions and behaviors.

The BRFSS is a random telephone survey of Massachusetts adults 18 and older.

Telephone numbers were randomly selected, and multiple attempts were made to reach each household. To be eligible to participate in this survey, the household had to be occupied by at least one adult aged 18 and older. Institutions, group quarters, and temporary residences lived-in for less than one month per year were excluded from the survey. In order to provide estimates of health at the local level, additional interviews were conducted among adults residing in the following major cities in the Commonwealth: Boston, Worcester, Springfield, Lawrence, Lowell, Fall River, and New Bedford.

Once a household was contacted, one adult was randomly selected to complete the interview. No proxy respondents or substitutions were allowed in the event that the selected adult was unwilling or unable to complete the interview for any reason such as language barriers, disability or lack of availability. In addition to

In 1998, 4,944 adults participated in the BRFSS. All data are weighted, and provide population-based estimates of health among Massachusetts adults.

English, the survey was conducted in Spanish and Portuguese. In 1998, 4,944 adults completed the survey, for a completion rate of 59% of eligible households. Data were weighted to reflect the probability of selection and differential participation by sex, age, and race. All analyses presented in this report were conducted using SUDAAN software and are considered estimates for the adult population in Massachusetts. For each estimate in the core section we include a 95% confidence interval* in order to assess

the variability of our data. Since we are taking a random sample of the population, and not a complete census, 95% confidence intervals* provide a range of values that most likely contain the true percent estimates for the population.

There are some limitations which should be considered when interpreting results from the BRFSS. Households that do not have a telephone do not have the opportunity to participate in the survey. Although only 2% of Massachusetts households lack a telephone, almost 10% of households living below poverty lack a phone, based on 1990 Census data. A substantial percent of households contacted to participate in the BRFSS did not complete the survey. Although households were telephoned on repeated occasions, interviewers were not always able to reach the randomly selected adult in the household. In addition, some adults contacted did not agree to participate in the survey. We would be concerned about a bias in our results if the respondents who participated in our survey differed significantly from those not included in the survey. The weighting of our data partially takes into account this non-response.

All data collected by the BRFSS are based on self-report from the respondents. By its nature, self-reported data may be subject to error for several reasons. An individual may have difficulty remembering events that occurred a long time ago or the frequency of certain behaviors. Some respondents may overreport socially desirable behaviors, while underreporting behaviors they perceive to be less acceptable. Finally, because the BRFSS surveys a randomly selected sample of Massachusetts adults, these results may differ from another random sample to some extent simply due to chance.

* see glossary

DEMOGRAPHIC PROFILE OF MASSACHUSETTS BRFSS SURVEY RESPONDENTS

In 1998, 4,944 adults age 18 and older completed the Massachusetts Behavioral Risk Factor Surveillance System. The BRFSS data are weighted to account for the probability of selection related to the number of telephones in the house, number of adults, and the city of residence. In addition, the data are post-stratified to the 1998 Massachusetts intercensal population estimates by age, gender and race.

DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS IN THE MASSACHUSETTS BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, 1998 (UNWEIGHTED SAMPLE SIZE AND WEIGHTED PERCENT)		
	UNWEIGHTED SAMPLE SIZE N	WEIGHTED PERCENT (%)
OVERALL	4944	100%
GENDER		
MALE	2017	47.5
FEMALE	2927	52.5
AGE GROUP		
18-24	430	12.6
25-34	1084	23.0
35-44	1161	21.4
45-54	832	14.9
55-64	488	10.2
65-74	483	9.5
75 AND OLDER	400	8.3
RACE/ETHNICITY		
WHITE	4225	88.7
BLACK	221	3.8
HISPANIC	268	4.0
ASIAN	104	2.5
OTHER	58	1.0
EDUCATION		
< HIGH SCHOOL	465	7.9
HIGH SCHOOL	1449	31.1
COLLEGE 1-3 YRS	1298	26.4
COLLEGE 4+ YRS	1706	34.6
HOUSEHOLD INCOME		
<\$25,000	1153	25.2
\$25-34,999	573	14.1
\$35-49,999	746	20.5
\$50,000-74,999	706	19.8
\$75,000+	738	20.4
EMPLOYMENT		
EMPLOYED	3268	67.9
OUT OF WORK	204	3.7
UNABLE TO WORK	149	2.1
HOMEMAKER	253	4.8
STUDENT	153	3.8
RETIRED	898	17.7

SECTION 1. OVERALL HEALTH STATUS

All respondents were asked to describe their overall health status as excellent, very good, good, fair, or poor, and were also asked on how many days in the previous month their mental health had been poor, and how many days physical or mental health had limited their daily activities.

In 1998, 10% of Massachusetts adults described their health as fair or poor. Older adults, Hispanics, and those with lower levels of education or income were more likely to have reported fair/poor health. The percent of adults unable to work in fair/poor health was particularly high. Overall, 9% of adults experienced poor mental health on 15 or more days in the previous month. Younger adults were more likely to report poor mental health for this amount of time. Overall, 4% of adults were limited in their usual activities by mental or physical health for 15 or more days in the previous month. The relationship between mental health, activity limitations and income, education, and employment was similar to health status.

PHYSICAL HEALTH AMONG MASSACHUSETTS ADULTS, 1998						
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>						
	FAIR OR POOR HEALTH		15+ DAYS POOR MENTAL HEALTH IN PAST MONTH		15+ DAYS HEALTH LIMITED ACTIVITIES	
	%	95% CI	%	95% CI	%	95% CI
OVERALL	10.2	9.1 - 11.3	9.1	7.9 - 10.3	4.2	3.5 - 4.9
GENDER						
MALE	9.7	8.0 - 11.3	7.4	5.7 - 9.1	3.7	2.7 - 4.8
FEMALE	10.7	9.2 - 12.2	10.6	9.0 - 12.3	4.6	3.6 - 5.6
AGE GROUP						
18-24	7.0	3.5 - 10.5	12.2	7.8 - 16.6	3.3	1.0 - 5.5
25-34	4.6	3.0 - 6.2	9.8	7.3 - 12.3	2.6	1.3 - 3.9
35-44	6.6	4.7 - 8.4	10.8	8.1 - 13.5	3.7	2.3 - 5.2
45-54	7.1	5.3 - 8.8	6.0	3.8 - 8.2	3.7	2.1 - 5.2
55-64	14.1	10.4 - 17.8	9.0	5.4 - 12.6	4.5	2.3 - 6.7
65-74	19.1	14.9 - 23.2	5.8	2.9 - 8.8	6.5	3.9 - 9.1
75 AND OLDER	31.6	24.8 - 38.4	5.9	2.8 - 9.0	8.8	5.2 - 12.4
RACE/ETHNICITY						
WHITE	9.9	8.8 - 11.1	8.8	7.5 - 10.0	4.0	3.3 - 4.7
BLACK	7.8	4.3 - 11.2	10.6	5.6 - 15.6	2.4	0.5 - 4.4
HISPANIC	16.1	9.6 - 22.7	16.1	9.0 - 23.2	7.0	2.0 - 12.0
ASIAN	5.1	0.4 - 9.9	5.8	0 - 12.5	0.8	0 - 2.4
OTHER	22.2	5.7 - 38.8	16.0	3.6 - 28.3	10.3	0 - 21.5
EDUCATION						
< HIGH SCHOOL	29.4	23.4 - 35.3	16.0	10.7 - 21.3	10.8	6.7 - 14.9
HIGH SCHOOL	12.7	10.5 - 14.8	9.2	7.1 - 11.3	4.6	3.2 - 6.0
COLLEGE 1-3 YRS	7.4	5.8 - 8.9	11.0	8.4 - 13.5	4.2	2.9 - 5.4
COLLEGE 4+ YRS	5.4	3.7 - 7.1	6.1	4.4 - 7.8	2.3	1.4 - 3.2
HOUSEHOLD INCOME						
<\$25,000	20.2	17.0 - 23.5	15.3	12.1 - 18.5	7.8	5.7 - 9.9
\$25-34,999	14.5	10.4 - 18.5	8.6	5.4 - 11.8	4.5	2.1 - 6.9
\$35-49,999	4.3	2.7 - 6.0	7.3	4.9 - 9.8	2.6	1.1 - 4.2
\$50,000-74,999	5.5	2.7 - 8.4	8.2	4.9 - 11.5	0.9	0.2 - 1.5
\$75,000+	2.7	1.3 - 4.1	6.2	3.7 - 8.7	2.4	0.9 - 3.8
EMPLOYMENT						
EMPLOYED	4.8	3.9 - 5.8	7.6	6.3 - 9.0	1.6	1.0 - 2.1
OUT OF WORK	17.8	10.4 - 25.3	19.8	12.1 - 27.4	12.4	5.8 - 19.0
UNABLE TO WORK	59.9	48.1 - 71.8	39.7	26.8 - 52.6	41.6	30.2 - 52.9
HOMEMAKER	7.7	4.4 - 10.9	14.4	6.7 - 22.0	4.6	0.0 - 9.1
STUDENT	3.1	0.3 - 5.9	11.9	5.4 - 18.3	2.2	0.4 - 3.9
RETIRED	25.2	21.3 - 29.2	7.1	4.6 - 9.5	8.5	6.1 - 10.8

Table 1a

Source: Massachusetts BRFSS, 1998

- **Trends over time:**

There has been no significant change in the percent of adults in fair or poor health since 1992, or in the percent of adults limited in activities due to health since 1993.

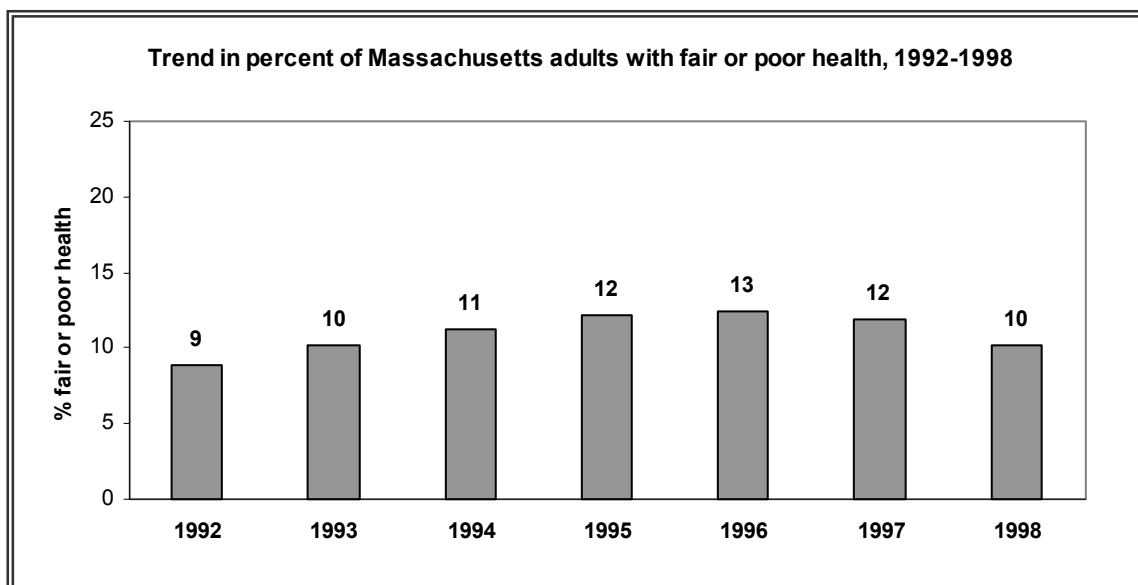


Figure 1a

Source: Massachusetts BRFSS, 1992-1998

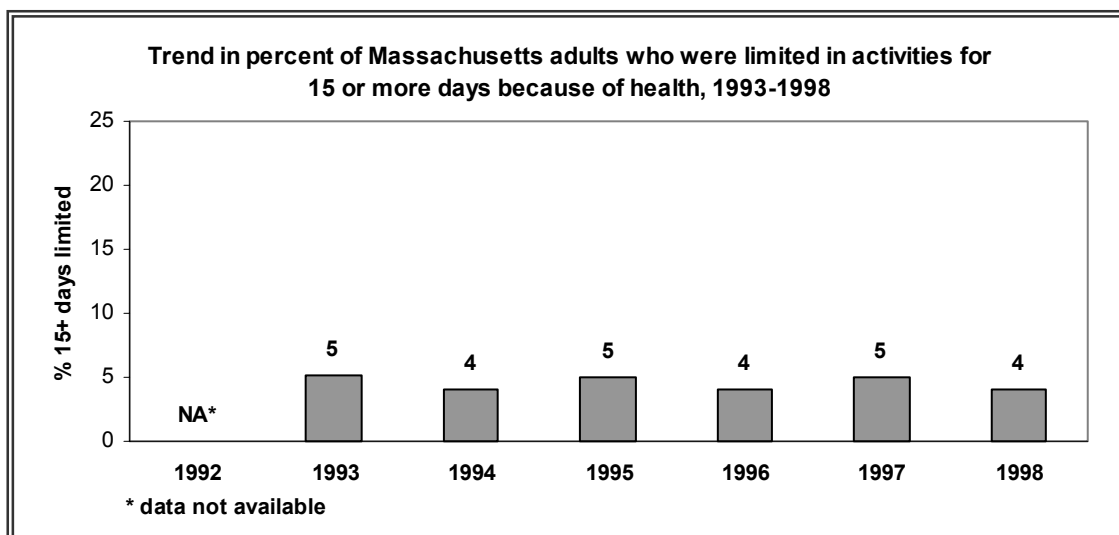


Figure 1b

Source: Massachusetts BRFSS, 1993-1998

- **Comparison with National Data and Healthy People 2000 Objectives:**

Compared to other states in 1998, Massachusetts had the 3rd lowest prevalence of adults in fair or poor health.

OVERALL HEALTH STATUS	
	FAIR/POOR HEALTH
Massachusetts %	10.2 %
US Median %	12.7 %
Range of US States	9.9 - 32.1 %
Massachusetts rank	3rd
Healthy People 2000	NA

Table 1b

Source: US and MA BRFSS, 1998

Box 1. RESEARCH BRIEFS ON HEALTH STATUS

Mean Number of Healthy Days, by Demographics

The health status variables asked in the BRFSS attempt to assess a person's perceived sense of well being. One measure of overall well-being is "healthy days", i.e. the number of days in the past 30 when both physical and mental health were good.*

Overall, adults under 65 reported slightly more healthy days (mean = 25 days) than those over 65 (mean = 23 days). However, the relationship between age to healthy days varied according to income. In Figure 1c, low-income adults under age 65 reported fewer healthy days than their counterparts with higher incomes and fewer healthy days than all adults 65 and older. However, for adults 65 and older, the number of healthy days did not vary by income.

The relationship between age and healthy days also varied according to sex. Figure 1d shows that males under 65 reported more healthy days than women of the same age. Healthy days decreased for older men but healthy days do not vary for women according to age.

Seasonal Patterns in Unhealthy Days**

Data were combined for 1996 to 1998 to look at seasonal patterns in the mean number of unhealthy days. Over each of the years, the number of unhealthy days was highest in the winter months and lowest in the summer months (Figure 1e).

*Number of Healthy days was calculated by subtracting the sum of "not good" physical and mental health days from 30, with the restriction that the number of "healthy days" could not be less than zero.

In calculating this measure, we assumed that there was minimal overlap of reported "not good" physical health days with mental health days.

** Mean unhealthy days is simply the sum of not good physical days and not good mental health days, with the restriction that the number could not be more than thirty days.

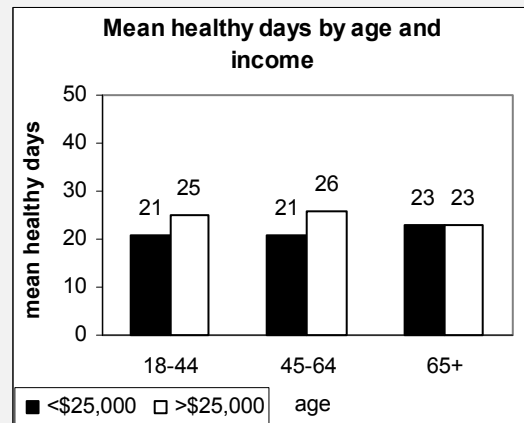


Figure 1c

Source: MA BRFSS, 1998

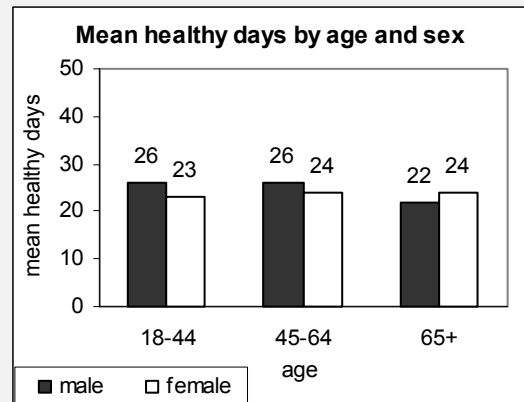


Figure 1d

Source: MA BRFSS, 1998

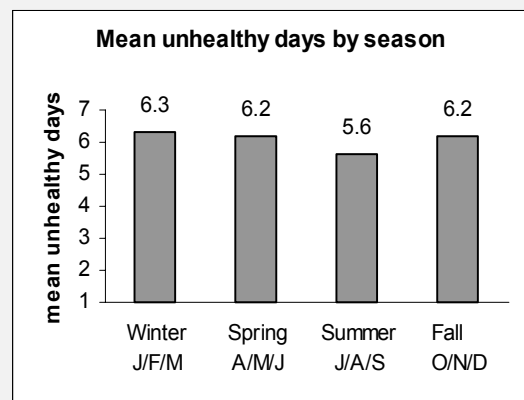


Figure 1e

Source: MA BRFSS, 1996-1998

SECTION 2: QUALITY OF LIFE

All respondents were asked to self-assess measures of quality of life. Respondents were asked on how many days in the previous month they had felt sad, blue or depressed, how many days pain made it hard to do usual activities, and how many days they felt very healthy and full of energy.

In 1998, 6% of Massachusetts adults said that they felt depressed for 15 or more days in the previous month. Hispanics, adults with lower income or education, and adults out of work were more likely to report feeling depressed for more than half the month. Six percent of adults reported 15 or more days in the previous month during which pain made it difficult to do regular activities. Adults age 75 and older, adults in the lowest income group, and adults who are unable to work were more likely to be limited by pain. 73% of adults felt healthy and full of energy for more than half of the previous month. Adults age 75 and older, with less than a high school education, or who were unable to work were less likely to feel healthy for 15 or more days.

QUALITY OF LIFE AMONG MASSACHUSETTS ADULTS, 1998						
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>						
	15+ DAYS DEPRESSED		15+ DAYS PAIN		15+ DAYS FULL OF ENERGY	
	%	95% CI	%	95% CI	%	95% CI
OVERALL	6.2	5.2 - 7.1	6.2	5.1 - 7.2	72.5	70.6 - 74.4
GENDER						
MALE	6.5	5.0 - 8.0	6.4	4.8 - 8.0	73.3	70.5 - 76.2
FEMALE	5.8	4.7 - 6.9	5.9	4.6 - 7.2	71.7	69.3 - 74.1
AGE GROUP						
18-24	8.7	4.8 - 12.5	4.6	1.0 - 8.1	70.8	64.4 - 77.2
25-34	5.6	3.6 - 7.5	4.8	2.8 - 6.8	69.2	65.3 - 73.1
35-44	7.1	5.0 - 9.2	5.9	3.7 - 8.0	73.7	70.0 - 77.3
45-54	4.7	3.1 - 6.2	5.9	3.8 - 7.9	74.7	69.8 - 79.6
55-64	6.0	3.4 - 8.6	7.8	5.0 - 10.7	79.4	75.0 - 83.9
65-74	5.3	3.2 - 7.4	7.5	4.9 - 10.0	79.6	75.2 - 84.1
75 AND OLDER	5.2	2.2 - 8.1	10.9	5.5 - 16.2	57.9	50.0 - 65.8
RACE/ETHNICITY						
WHITE	5.7	4.8 - 6.7	6.1	5.0 - 7.2	73.1	71.1 - 75.1
BLACK	7.1	3.4 - 10.7	6.2	2.4 - 10.1	67.6	58.8 - 76.4
HISPANIC	13.4	7.2 - 19.6	8.6	3.9 - 13.3	64.5	55.3 - 73.6
ASIAN	3.1	0 - 8.1	0.4	0 - 1.2	77.4	65.1 - 89.8
OTHER	15.1	2.8 - 27.4	8.2	0 - 16.7	65.6	48.7 - 82.5
EDUCATION						
< HIGH SCHOOL	16.6	10.8 - 22.4	14.7	9.9 - 19.4	53.2	46.0 - 60.3
HIGH SCHOOL	7.3	5.4 - 9.3	7.7	5.6 - 9.9	73.0	69.7 - 76.2
COLLEGE 1-3 YRS	6.0	4.4 - 7.7	5.9	4.0 - 7.8	73.0	69.3 - 76.5
COLLEGE 4+ YRS	3.0	2.1 - 3.9	3.2	1.9 - 4.6	76.0	72.9 - 79.1
HOUSEHOLD INCOME						
<\$25,000	10.4	8.1 - 12.7	12.1	8.9 - 15.4	64.4	60.0 - 68.7
\$25-34,999	7.7	4.5 - 10.9	4.8	2.5 - 7.2	71.7	66.5 - 76.8
\$35-49,999	4.1	2.3 - 5.9	4.5	2.6 - 6.3	77.8	73.7 - 81.9
\$50,000-74,999	4.4	2.0 - 6.8	4.9	1.8 - 8.1	74.3	69.3 - 79.2
\$75,000+	3.8	1.9 - 5.6	1.9	1.0 - 2.9	76.5	71.8 - 81.1
EMPLOYMENT						
EMPLOYED	4.2	3.2 - 5.2	3.7	2.6 - 4.7	75.3	73.1 - 77.6
OUT OF WORK	18.3	10.4 - 26.2	22.1	12.0 - 32.1	61.7	52.4 - 71.0
UNABLE TO WORK	38.0	26.4 - 49.6	44.5	32.6 - 56.4	30.8	17.9 - 43.7
HOMEMAKER	8.2	3.1 - 13.3	3.9	1.5 - 6.3	71.8	63.8 - 79.8
STUDENT	12.0	4.2 - 19.8	2.1	0 - 4.4	67.7	57.9 - 77.5
RETIRED	5.6	3.8 - 7.4	9.3	6.4 - 12.1	69.8	65.2 - 74.4

Table 2a.

Source: Massachusetts BRFSS, 1998

- **Trends over time:**
data not available
- **Comparison with National Data and Healthy People 2000 Objectives:**
data not available

BOX 2 . RESEARCH BRIEFS ON QUALITY OF LIFE

Measures of Quality of Life

In addition to quality of life questions about feeling depressed, being limited by pain, and feeling healthy and full of energy, all adults were asked about two additional quality of life measures -- the number of days in the past month that they felt worried, tense, or anxious, and the number of days in the past month where they did not get enough rest or sleep. Figure 2a reflects the distribution of adults who reported having a good month, that is three or fewer poor quality of life days, for none, one, two, three, four, or all five of these quality of life measures.

33% of adults reported having a good month with respect to all five quality of life measures, while 2% reported a good month for none of the measures. A greater proportion of adults age 65 and older reported a good month for all five quality of life measures compared to younger adults. Differences in the proportion of adults who had a good month with respect to getting sufficient sleep and rest were particularly notable by age group (Figure 2b).

Suicide

In 1998, all Massachusetts adults were asked if they had seriously considered committing suicide during the past year. 2% of adults said that they had seriously considered suicide. 27% of adults who considered suicide indicated that they were currently dissatisfied or very dissatisfied with life, compared to 5% of those who did not consider suicide. In addition, 54% of adults who considered suicide felt they did not always or usually get the social and emotional support they needed, compared to only 19% of those who did not consider suicide.

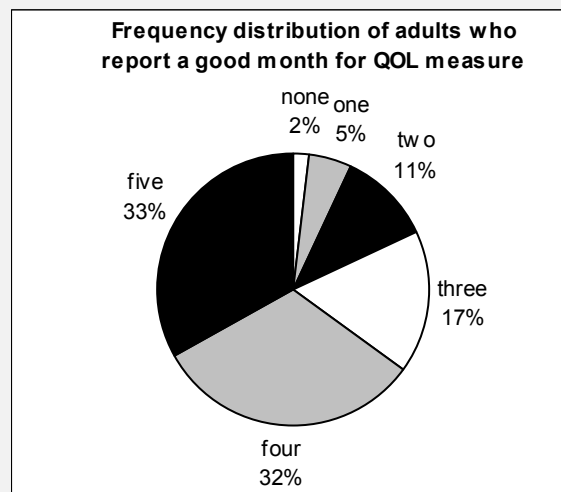


Figure 2a

Source: MA BRFSS, 1998

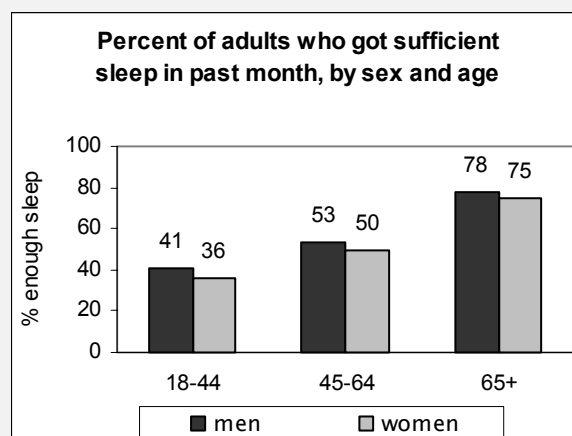


Figure 2b

Source: MA BRFSS, 1998

SECTION 3. HEALTH ACCESS AND UTILIZATION

All respondents were asked whether they currently had health insurance, whether they were unable to see a doctor in the past year due to cost, and when they last had a routine medical checkup.

In 1998, 9% of Massachusetts adults were currently without health insurance. Age, education, and income were all inversely associated with being uninsured. Blacks and Hispanics were more likely to be without insurance. 8% of adults were unable to see a doctor because of cost. Cost prevented a greater percent of younger adults, adults with lower levels of education or household income, and Hispanics from seeing a doctor. Almost 78% of adults had a yearly routine checkup in 1998. Women were more likely than men to have had a routine checkup. Education and income did not predict whether a person had a routine checkup. Black adults and older adults were more likely to have had an annual checkup.

HEALTH ACCESS AND UTILIZATION AMONG MASSACHUSETTS ADULTS, 1998						
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>						
	NO HEALTH INSURANCE		DID NOT SEE DOCTOR DUE TO COST		CHECKUP IN PAST YEAR	
	%	95% CI	%	95% CI	%	95% CI
OVERALL	8.7	7.4 - 9.9	7.9	6.7 - 9.0	77.6	75.9 - 79.3
GENDER						
MALE	10.4	8.6 - 12.1	7.9	6.4 - 9.4	69.6	66.8 - 72.4
FEMALE	7.1	5.4 - 8.8	7.8	6.0 - 9.5	84.7	82.7 - 86.8
AGE GROUP						
18-24	17.2	11.3 - 23.2	15.5	9.4 - 21.6	77.1	70.9 - 83.3
25-34	11.2	8.6 - 13.8	9.3	6.9 - 11.7	70.4	66.6 - 74.2
35-44	9.1	6.9 - 11.3	9.0	6.7 - 11.2	71.4	67.6 - 75.1
45-54	5.6	3.6 - 7.7	5.2	3.6 - 6.8	75.3	70.7 - 79.8
55-64	6.3	3.1 - 9.4	4.7	2.6 - 6.9	85.2	81.3 - 89.2
65-74	2.9	0.7 - 5.1	3.6	0.6 - 6.5	92.7	90.1 - 95.2
75 AND OLDER	3.1	0.3 - 5.8	2.7	1.2 - 4.1	92.1	87.7 - 96.6
RACE/ETHNICITY						
WHITE	7.6	6.3 - 8.9	6.9	5.8 - 8.0	77.8	76.0 - 79.6
BLACK	16.4	8.4 - 24.3	9.9	4.0 - 15.8	88.4	82.9 - 93.8
HISPANIC	20.1	13.1 - 27.1	15.8	9.1 - 22.6	73.6	65.1 - 82.2
ASIAN	10.2	3.1 - 17.3	18.3	0.9 - 35.6	68.1	50.9 - 85.2
OTHER	18.8	6.1 - 31.4	18.1	4.3 - 31.8	73.5	57.1 - 89.9
EDUCATION						
< HIGH SCHOOL	17.9	12.8 - 23.1	14.5	10.0 - 19.1	77.1	70.9 - 83.2
HIGH SCHOOL	11.1	8.9 - 13.2	7.1	5.4 - 8.8	77.9	74.9 - 80.8
COLLEGE 1-3 YRS	8.3	5.5 - 11.0	9.9	6.8 - 13.0	76.1	72.4 - 79.7
COLLEGE 4+ YRS	4.7	3.1 - 6.2	5.4	3.9 - 7.0	78.4	75.6 - 81.2
HOUSEHOLD INCOME						
<\$25,000	15.5	12.5 - 18.6	15.4	11.6 - 19.1	80.8	77.1 - 84.5
\$25-34,999	10.9	7.7 - 14.2	8.2	5.1 - 11.3	76.1	71.5 - 80.7
\$35-49,999	6.9	4.5 - 9.4	6.5	4.1 - 8.9	77.1	72.9 - 81.4
\$50,000-74,999	3.5	1.5 - 5.6	3.7	2.0 - 5.4	73.8	69.1 - 78.4
\$75,000+	2.3	1.0 - 3.6	2.6	0.7 - 4.4	79.1	75.1 - 83.0
EMPLOYMENT						
EMPLOYED	9.4	7.7 - 11.0	8.4	7.0 - 9.9	74.0	71.8 - 76.2
OUT OF WORK	19.8	13.1 - 26.5	16.3	9.4 - 23.2	72.4	63.3 - 81.4
UNABLE TO WORK	7.9	1.8 - 14.0	15.5	7.7 - 23.4	91.6	86.3 - 96.9
HOMEMAKER	8.2	3.5 - 12.8	4.8	2.0 - 7.7	79.4	72.8 - 86.0
STUDENT	9.5	3.8 - 15.3	13.7	1.7 - 25.7	71.0	58.3 - 83.7
RETIRED	3.5	1.7 - 5.3	2.6	1.6 - 3.6	91.2	88.5 - 93.9

Table 3a

Source: Massachusetts BRFSS, 1998

- **Trends over time:**

Since 1991, there has been little change in the percent of adults without health insurance or in the percent of adults who could not afford to see a doctor within the past year due to cost. Since 1986, however, the percent of adults who have had an annual routine checkup has increased substantially over time.

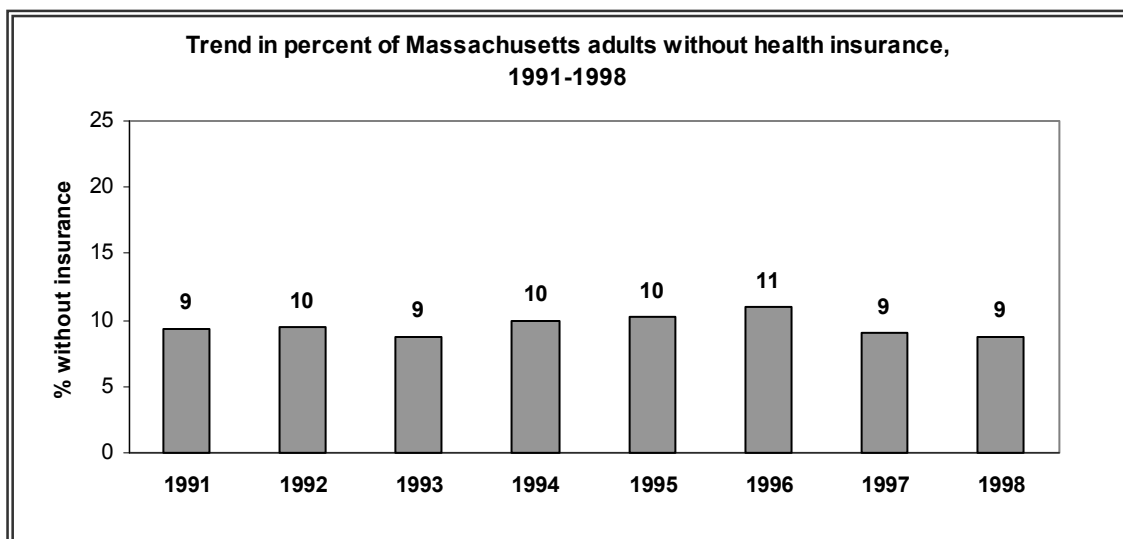


Figure 3a

Source: Massachusetts BRFSS, 1991-1998

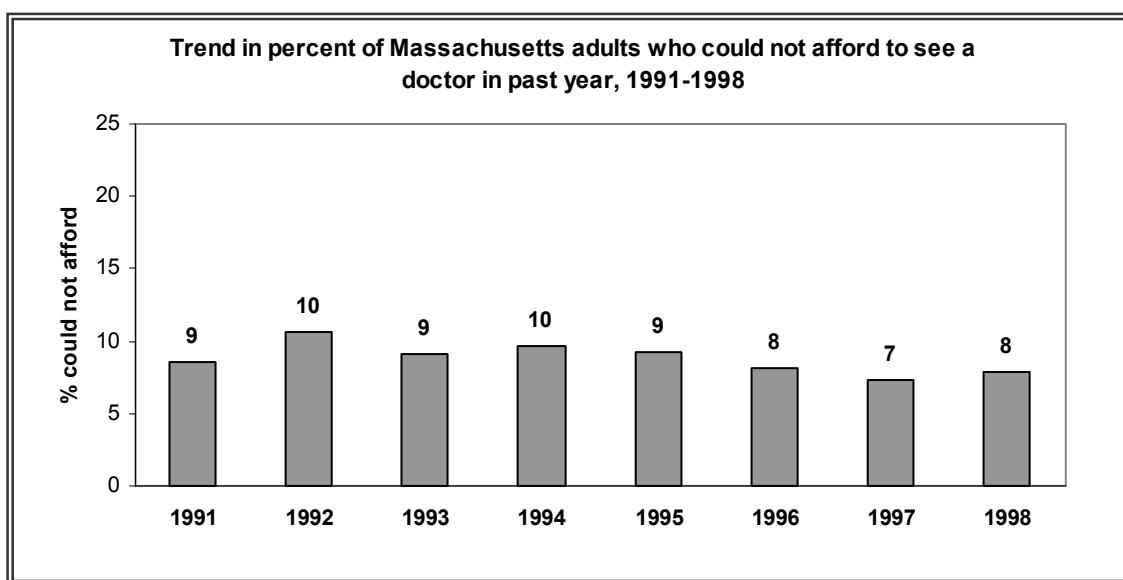


Figure 3b

Source: Massachusetts BRFSS, 1991-1998

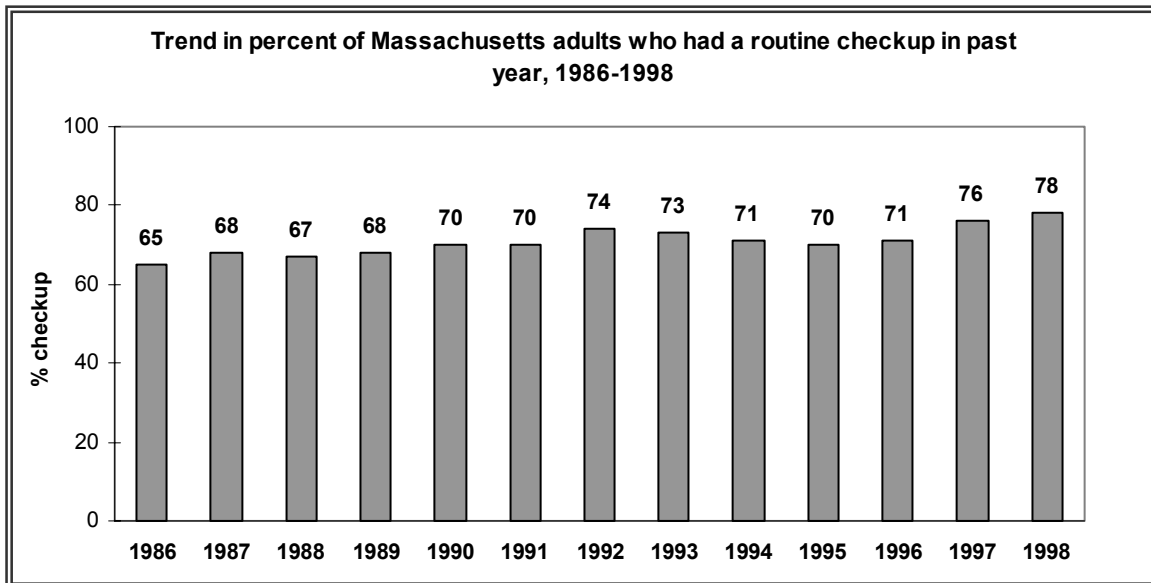


Figure 3c

Source: Massachusetts BRFSS, 1986-1998

- Comparison with National Data and Healthy People 2000 Objectives:**

Compared to other states in 1998, Massachusetts had the 6th lowest percent of uninsured adults.

HEALTH ACCESS AND UTILIZATION	
	NO HEALTH INSURANCE
<i>Massachusetts %</i>	8.7 %
<i>US Median %</i>	13.0 %
<i>Range of US States</i>	5.9 – 23.6 %
<i>Massachusetts rank</i>	6 th
<i>Healthy People 2000</i>	N/A

Table 3b

Source: US and MA BRFSS, 1998

BOX 3. RESEARCH BRIEFS ON HEALTH ACCESS AND UTILIZATION

Health Insurance

Lack of health insurance is associated with delays in health care access and increases in mortality. Having some health insurance but still being unable to afford out-of-pocket medical expenses may also have adverse health consequences. In 1998, the BRFSS included several questions about health insurance. Adults were asked whether they currently had health insurance, and whether they needed to see a doctor but could not because of cost. Those who had insurance but still could not see a doctor because of cost were classified as underinsured. Younger adults were more likely to be likely to be both uninsured and underinsured (Figure 3d).

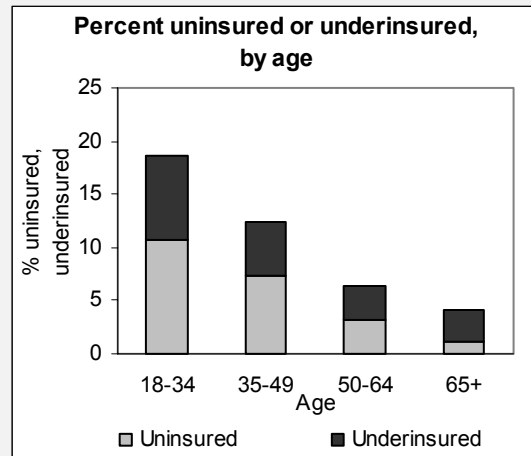


Figure 3d

Source: MA BRFSS, 1998

Health Insurance and Health Care Utilization

Inadequate health insurance was defined as currently having no health insurance, being uninsured at any time during the past year, or being unable to see a doctor because of cost. Overall, 15% of Massachusetts adults did not have adequate insurance. Figure 3e compares time since last checkup in persons with adequate and inadequate insurance. Adults with inadequate insurance were less likely to have seen a doctor in the past year than those with adequate insurance. This difference remained after taking into account the different age distributions of the two groups.

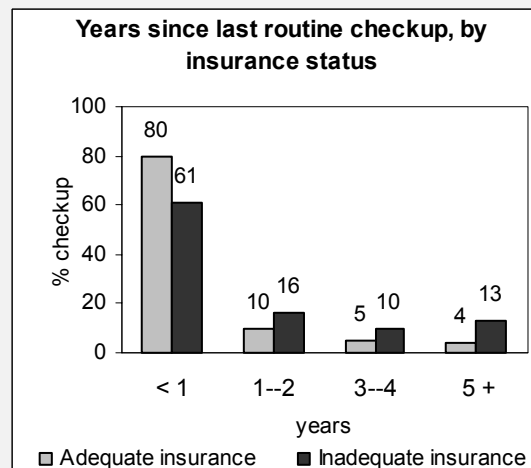


Figure 3e

Source: MA BRFSS, 1998

Health Insurance and Health Status

Figure 3f compares health status in adults with adequate and inadequate insurance in adults under 65. Overall, those who were inadequately insured were more likely to be in fair or poor health than those who were adequately insured. The differences in health status were elevated across all age groups, but widened substantially among adults age 50 to 64.

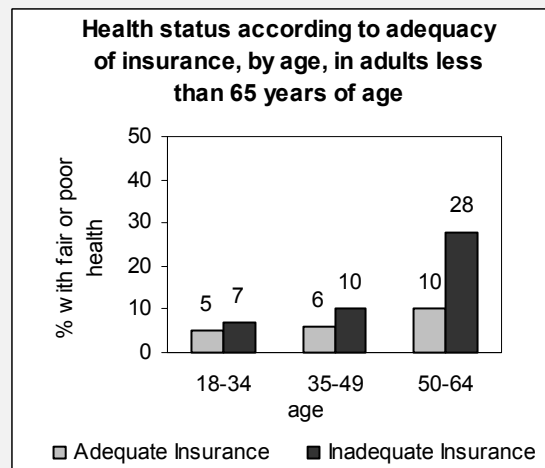


Figure 3f

Source: MA BRFSS, 1998

SECTION 4. DENTAL HEALTH, ACCESS AND UTILIZATION

All respondents were asked questions related to oral health. Respondents were asked when they had last visited a dentist, whether they currently had dental insurance to pay for all or part of routine dental care, and how many teeth they had lost due to decay or gum disease.

In 1998, 78% of adults reported visiting a dentist in the past year and 38% reported having no dental insurance to pay all or part of their dental needs. Older adults were less likely to have been to the dentist, and much less likely to have dental insurance. Socioeconomic characteristics were strongly predictive of both whether someone visited the dentist and whether they were without dental insurance. Over 18% of all adults were missing 6 or more teeth due to decay. The proportion of adults with 6 or more teeth missing increased sharply with age and as education and income decreased. Whites were more likely to have substantial tooth loss.

ORAL HEALTH AMONG MASSACHUSETTS ADULTS, 1998						
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>						
	DENTAL VISIT IN PAST YEAR		NO DENTAL INSURANCE		6 OR MORE TEETH MISSING FROM DISEASE	
	%	95% CI	%	95% CI	%	95% CI
OVERALL	78.5	76.9 - 80.2	38.3	36.6 - 40.3	18.1	16.5-19.7
GENDER						
MALE	77.4	74.9 - 79.9	37.6	34.5 - 40.7	17.9	15.4 - 20.5
FEMALE	79.6	77.4 - 81.8	38.9	36.3 - 41.6	18.2	16.3 - 20.1
AGE GROUP						
18-24	81.1	75.7 - 86.6	33.8	26.5 - 41.1	1.5	0.0 - 3.7
25-34	76.2	72.7 - 79.8	33.8	29.7 - 37.8	2.7	1.4 - 4.1
35-44	85.8	83.1 - 88.5	28.7	24.9 - 32.4	7.9	5.8 - 10.0
45-54	83.4	79.8 - 87.0	27.9	23.5 - 32.4	20.1	15.1 - 25.2
55-64	76.0	70.8 - 81.2	44.7	38.4 - 51.1	37.0	33.0 - 43.0
65-74	73.6	68.4 - 78.8	60.7	54.6 - 66.8	52.4	45.8 - 59.0
75 AND OLDER	61.3	53.9 - 68.6	71.8	65.3 - 78.3	53.2	45.9 - 60.6
RACE/ETHNICITY						
WHITE	78.7	77.0 - 80.5	38.2	36.0 - 40.4	18.9	17.2 - 20.6
BLACK	81.5	74.9 - 88.0	30.5	21.3 - 39.8	13.7	8.4 - 19.0
HISPANIC	72.2	63.5 - 80.7	37.8	28.8 - 46.9	9.6	4.9 - 14.3
ASIAN	84.2	74.4 - 94.0	47.1	31.8 - 62.4	9.8	0.0 - 20.3
OTHER	64.8	46.4 - 83.2	56.0	38.7 - 73.3	11.9	2.4 - 21.3
EDUCATION						
< HIGH SCHOOL	52.4	45.3 - 59.5	45.3	38.3 - 52.3	40.8	34.0 - 47.7
HIGH SCHOOL	73.7	70.5 - 76.8	44.9	41.1 - 48.7	25.9	22.7 - 29.2
COLLEGE 1-3 YRS	80.5	77.4 - 83.7	33.4	29.5 - 37.4	15.4	12.6 - 18.2
COLLEGE 4+ YRS	87.0	84.7 - 89.4	34.5	31.1 - 37.8	8.2	6.0 - 10.4
HOUSEHOLD INCOME						
<\$25,000	65.7	61.4 - 70.1	52.3	47.8 - 56.8	31.2	27.0 - 35.4
\$25-34,999	71.5	66.2 - 76.8	43.2	37.2 - 49.2	24.7	19.4 - 30.0
\$35-49,999	80.6	76.9 - 84.3	36.2	31.2 - 41.2	11.5	8.7 - 14.2
\$50,000-74,999	86.5	83.2 - 89.8	24.8	20.3 - 29.4	11.5	7.8 - 15.3
\$75,000+	91.3	88.8 - 93.9	22.4	18.0 - 26.8	9.7	5.9 - 13.4
EMPLOYMENT						
EMPLOYED	81.7	79.8 - 83.6	31.5	29.0 - 33.9	10.9	9.2 - 12.5
OUT OF WORK	74.9	66.4 - 83.4	46.4	36.5 - 56.3	12.6	6.6 - 18.5
UNABLE TO WORK	58.6	46.1 - 71.1	33.9	22.6 - 45.2	40.9	29.2 - 52.6
HOMEMAKER	80.7	74.0 - 87.3	41.1	32.3 - 49.8	12.6	7.2 - 18.0
STUDENT	82.9	75.5 - 90.2	35.9	25.4 - 46.5	0.3	0 - 0.9
RETIRED	67.6	63.1 - 72.0	64.3	59.8 - 68.8	51.9	47.1 - 56.8

Table 4a

Source: Massachusetts BRFSS, 1998

- **Trends over time:**
data not available
- **Comparison with National Data and Healthy People 2000 Objectives:**
data not available

BOX 4. RESEARCH BRIEFS ON ORAL HEALTH

Long-term Cigarette Smoking and Use of Dental Services

Early diagnosis of oral cancer involves a simple examination of the oral cavity as part of a usual checkup, and early treatment has positive health outcomes for patients. Yet survival from oral cancer is among the lowest of all cancer sites, primarily due to advanced stage at diagnosis. Given the strong association between tobacco use and risk of oral cancer, we hypothesized that long-term smokers, i.e. current or recent former smokers who smoked for at least 10 years, were less likely to go the dentist annually compared to adults who never smoked. We used 1998 BRFSS data on adults 35 and older to assess this hypothesis.

In 1998, only 70% of long-term smokers had visited the dentist within the year, compared to 83% of never smokers. Long-term smoking was consistently related to a lower likelihood of a recent dental visit, independent of socioeconomic characteristics. Adults with lower income or education were less likely to have had a recent dental visit. However, never smokers with the lowest income level were as likely to have seen a dentist as long-term smokers with the highest income (Figure 4a). While dental insurance is also an important predictor of dental service utilization, uninsured never smokers were almost as likely to have had a recent dental visit as insured long-term smokers (Figure 4b).

Among both long-term and never smokers, we found that older adults were less likely to have had a recent dental visit. However, the risk of oral cancer greatly increases with increasing age. In this context, the inverse relationship between age-specific use of dental services among long-term smokers is striking (Figure 4c).

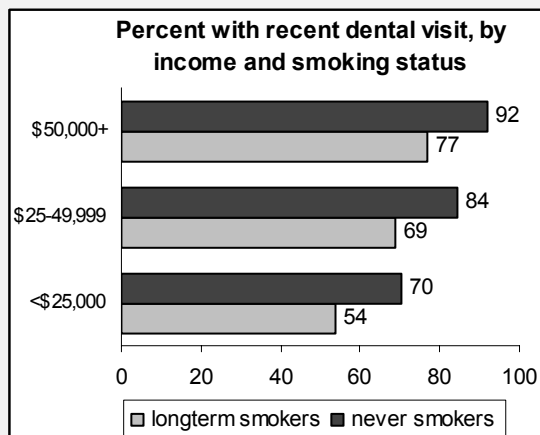


Figure 4a

Source: MA BRFSS, 1998

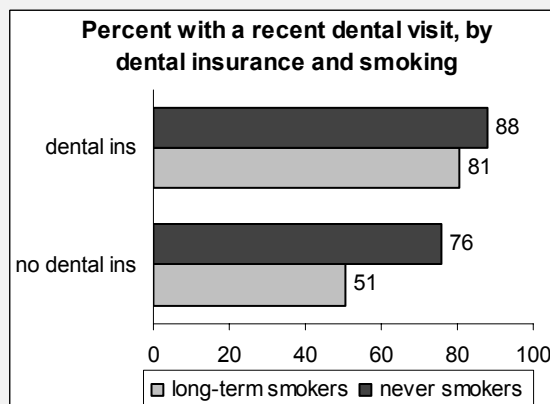


Figure 4b

Source: MA BRFSS, 1998

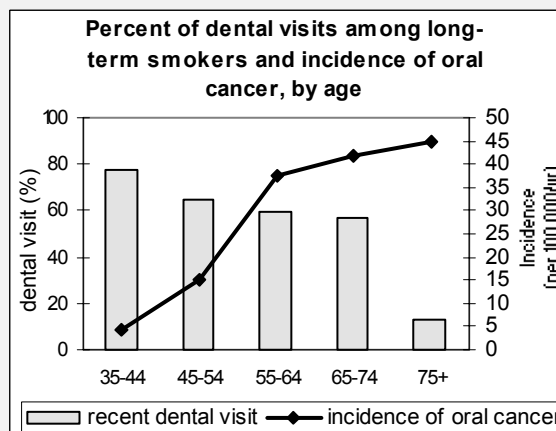


Figure 4c

Source: MA BRFSS, 1998, MA Cancer Registry, 1998

SECTION 5. TOBACCO USE

All respondents were asked whether they had smoked 100 cigarettes in their lifetime AND whether they currently smoked now (defined as current smokers). All adults were also asked when they had last smoked a cigar, if at all.

In 1998, 21.1% of Massachusetts adults reported currently smoking cigarettes.¹ The percent of adults who smoked decreased with increasing age. Socioeconomic status was strongly related to whether someone smoked: adults with lower levels of income or education, and adults who were out of work or unable to work, were much more likely to be current smokers. Almost 16% of adults smoked a cigar within the past year. Men were much more likely than women to have smoked a cigar. Younger adults, and adults in higher income or education groups were more likely to have had a cigar during this time period.

TOBACCO USE AMONG MASSACHUSETTS ADULTS, 1998				
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>				
	CURRENT SMOKER		CIGAR IN PAST YEAR	
	%	95% CI	%	95% CI
OVERALL	21.1	19.5 - 22.7	15.5	14.0 - 17.0
GENDER				
MALE	21.2	18.7 - 23.6	26.7	24.0 - 29.4
FEMALE	21.0	18.8 - 23.2	5.6	4.2 - 7.0
AGE GROUP				
18-24	31.7	25.0 - 38.3	27.7	21.4 - 33.9
25-34	23.0	19.7 - 26.4	23.9	20.2 - 27.5
35-44	26.8	23.2 - 30.4	18.9	15.6 - 22.1
45-54	18.1	14.7 - 21.6	11.5	8.4 - 14.7
55-64	20.5	15.5 - 25.5	5.2	2.5 - 7.9
65-74	9.4	6.3 - 12.5	1.9	0.7 - 3.0
75 AND OLDER	4.8	1.8 - 7.8	1.7	0.1 - 3.3
RACE/ETHNICITY				
WHITE	21.0	19.2 - 22.7	15.9	14.3 - 17.5
BLACK	21.5	13.5 - 29.4	11.3	4.5 - 18.1
HISPANIC	26.0	17.7 - 34.4	14.5	7.3 - 21.6
ASIAN	11.5	2.0 - 20.9	15.5	4.1 - 26.9
OTHER	30.1	13.5 - 46.7	8.9	0.6 - 17.3
EDUCATION				
< HIGH SCHOOL	35.5	28.9 - 42.1	9.8	5.8 - 13.8
HIGH SCHOOL	27.8	24.6 - 31.1	14.1	11.4 - 16.8
COLLEGE 1-3 YRS	23.8	20.4 - 27.1	17.0	13.9 - 20.1
COLLEGE 4+ YRS	9.7	7.8 - 11.5	17.2	14.7 - 19.8
HOUSEHOLD INCOME				
<\$25,000	28.9	24.8 - 33.0	12.6	9.4 - 15.9
\$25-34,999	28.7	23.4 - 34.0	16.2	11.4 - 20.9
\$35-49,999	25.2	21.0 - 29.5	16.2	12.3 - 20.0
\$50-74,999	17.8	14.1 - 21.6	18.6	14.6 - 22.6
\$75,000+	10.1	7.1 - 13.1	20.5	16.6 - 24.4
EMPLOYMENT				
EMPLOYED	23.6	21.4 - 25.7	19.8	17.8 - 21.9
OUT OF WORK	34.5	25.3 - 43.7	15.0	8.1 - 21.8
UNABLE TO WORK	32.2	22.1 - 42.2	11.9	4.0 - 19.8
HOMEMAKER	17.1	10.8 - 23.5	1.5	0 - 3.1
STUDENT	17.3	9.4 - 25.2	22.2	12.8 - 31.7
RETIRED	9.5	6.9 - 12.0	2.0	1.0 - 3.0

Table 5a

Source: Massachusetts BRFSS, 1998

¹ In 1999, 19.3% of Massachusetts adults were current smokers, according to recently released data from the Centers for Disease Control and Prevention.

- **Trends over time:**

Since 1986, the percent of adults who were current smokers has decreased over time.

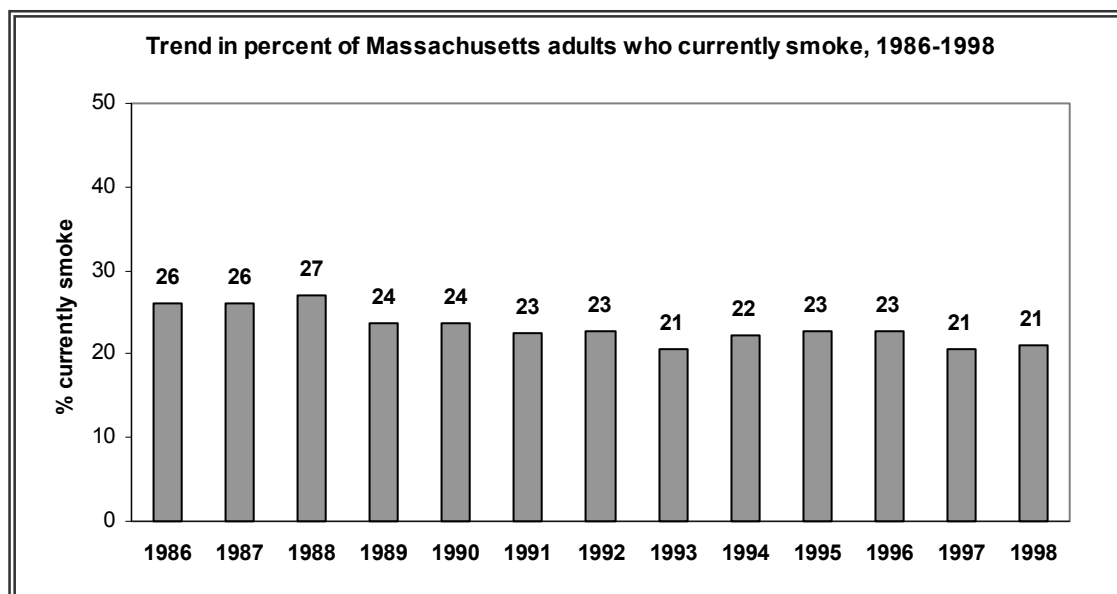


Figure 5a

Source: Massachusetts BRFSS, 1986-1998

- **Comparison with National Data and Healthy People 2000 Objectives:**

In 1998, Massachusetts fell short of the Healthy People 2000 Objective to reduce the percent of current adult smokers to no more than 15%. Compared to other states in 1998, Massachusetts had the 9th lowest prevalence of current smokers.

TOBACCO USE	
	CURRENT SMOKERS
<i>Massachusetts %</i>	21.1 %
<i>US Median %</i>	22.9 %
<i>Range of US States</i>	14.2 - 30.8 %
<i>Massachusetts rank</i>	9 th
<i>Healthy People 2000</i>	15%

Table 5b

Source: US and MA BRFSS, 1998, HP 2000 Objectives

Box 5. RESEARCH BRIEFS ON TOBACCO USE

Profile of current smokers

In 1998, all smokers were asked questions regarding the number of cigarettes smoked per day, quit attempts in the previous year, whether they planned to quit in the next 30 days, and how soon in the morning they smoked their first cigarette, a measure of dependence. Table 5c presents characteristics of current smokers. Men were more likely to be heavy smokers (smoke 21+ cigarettes per day) and to smoke their first cigarette within 5 minutes of waking than women. While men were slightly more likely to report that they were planning to quit, a similar percent of men and women had made a quit attempt of one day or more in the previous year.

The percent of adults who said they were planning to quit smoking within the next 30 days has been increasing over time. There have been significant increases in the proportion of both male and female smokers who are preparing to quit smoking since 1994 (Figure 5b).

Recent quitters

Among adults who were smoking a year before the survey, almost 11% quit during 1998. Among adults who continued to be current smokers in 1998, 56% made a quit attempt of at least one day. However, there were important differences in quit rates and quit attempts depending upon whether the smoker lived with another smoker (Figure 5c).

Both groups of current smokers and recent quitters were asked if they received advice from a doctor to quit and if they had seen, heard, or read other types of quit information. There was essentially no difference among these groups in the proportion advised by a doctor to quit or the type of quit information received.

We compared recent quitter to current smokers on several measures of mental health and quality of life such as overall satisfaction with life, days of poor mental health, and days feeling depressed, anxious, or full of energy. While, current smokers reported fewer days with anxiety, there were otherwise no differences.

Profile of current smokers, 1998

	Overall %	Men %	Women %
Current smokers			
Daily	16.9	17.5	16.5
Some days	4.1	3.7	4.5
21+ cigarettes/day	19.0	24.5	14.3
Time to first cigarette			
0-5 minutes	28.2	33.4	23.4
6-30 minutes	27.3	29.0	25.8
31+ minutes	44.6	37.6	50.9
Plan to quit in next 30 days	42.3	45.2	39.6
Quit attempt	57.3	55.7	58.7

Table 5c

Source: MA BRFSS, 1998

Trends in percent of Massachusetts adults who plan to quit smoking within 30 days, by gender, 1994-1998

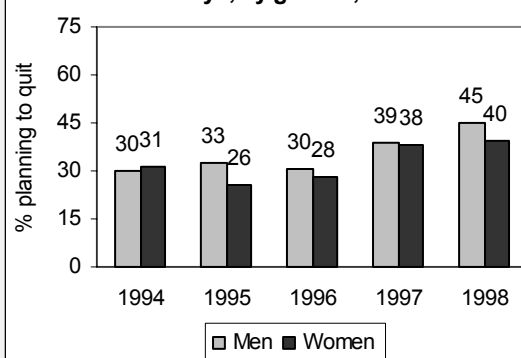
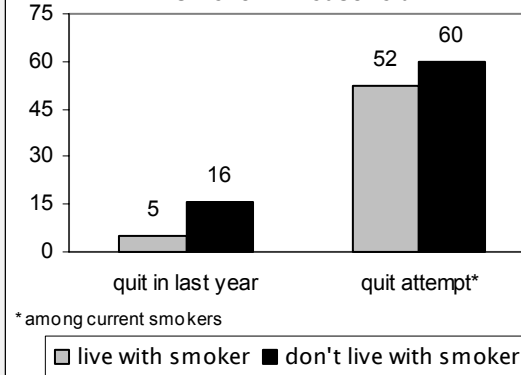


Figure 5b

Source: MA BRFSS, 1994-1998

Percent of smokers who quit in last year or made quit attempt, by other smoker in household



* among current smokers

Figure 5c

Source: MA BRFSS, 1998

BOX 5 CONTINUED. RESEARCH BRIEFS ON TOBACCO USE

Support for Smoking Bans

Since 1992, Massachusetts has collected information on support for smokefree restaurants, indoor work areas, bars, and other areas. Overall support has increased substantially overtime in all areas (Figure 5d), and in 1998, 61% of Massachusetts adults supported smoking bans in restaurants, 58% supported bans in indoor work areas, and 25% supported bans in bars. While the smoking status of respondents was predictive of support for bans in all locations in 1998 (Figure 5e), it is noteworthy that current, former and never smokers have experienced similar increases in support for smokefree areas over time.

Support for Additional Tobacco Policy

In 1998, Massachusetts adults were asked to give their opinions on questions related to tobacco policy.

- 90% of Massachusetts adults felt that a list of ingredients contained in tobacco products should be made available to the public. No differences were seen by smoking status.
- 47% of Massachusetts adults felt that all or most storekeepers are careful about not selling cigarettes to anyone under 18 years of age.

Smoking Rules in the Home

All Massachusetts adults were asked about smoking rules in their homes: whether smoking was permitted anywhere, in some places or at some times, or not permitted anywhere. The percent of adults living in a household where no one is allowed to smoke has been increasing over time (Figure 5f). Although smokers have been less likely to live in a household with restrictive smoking rules, current, former and never smokers have all seen moderate increases in smoking rules, from 1992-1998. In 1998, 16% of current smokers, 51% of former smokers, and 66% of those who never smoked were living in a household where smoking was not permitted anywhere.

Trends in percent of Massachusetts adults who support a smoking ban, by location, 1992-1998

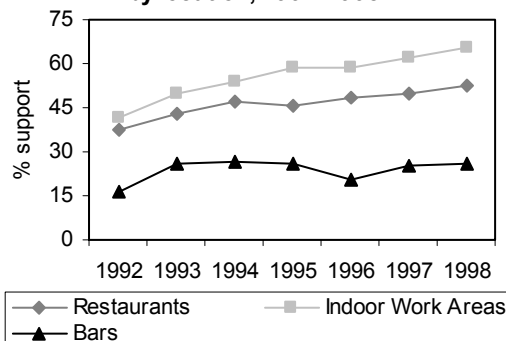


Figure 5d Source: MA BRFSS, 1992-1998

Percent of Massachusetts adults who support smoking bans, by location and smoking status

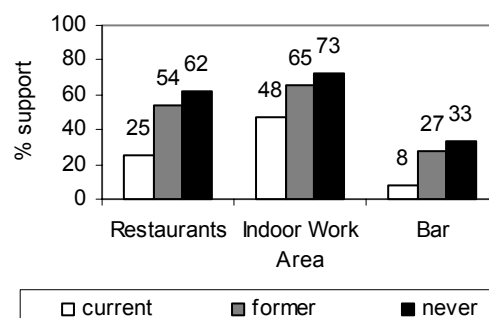


Figure 5e Source: MA BRFSS, 1998

Trends in percent of Massachusetts adults living in a household where no one is allowed to smoke, by smoking status, 1992-1998

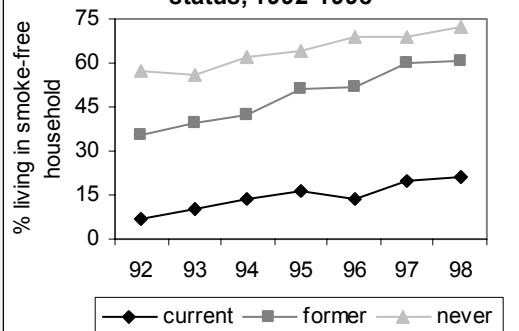


Figure 5f Source: MA BRFSS, 1992-1998

SECTION 6. PHYSICAL ACTIVITY

In 1998, all respondents were asked whether they participated in any leisure time physical activity in the previous month. Based on the duration and intensity of exercise, adults were evaluated on whether they participated in regular physical activity, defined as 30 minutes of exercise of any intensity 5 days per week or 20 minutes of vigorous activity 3 days per week. This definition is similar to the Surgeon General's recommendation for sufficient physical activity.

In 1998, 74% of Massachusetts adults said that they had participated in some form of leisure time physical activity in the previous month. There were marked differences in the percent of adults who exercised by income, education, race, employment and age. 30% of adults participated in regular physical activity. The relationship between demographic characteristics and regular physical activity was similar to any exercise, although age was not as strongly related.

PHYSICAL ACTIVITY AMONG MASSACHUSETTS ADULTS, 1998				
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>				
	ANY EXERCISE IN PAST MONTH		REGULAR PHYSICAL ACTIVITY	
	%	95% CI	%	95% CI
OVERALL	73.6	71.9 - 75.4	30.2	28.3 - 32.0
GENDER				
MALE	76.1	73.6 - 78.6	29.0	26.3 - 31.8
FEMALE	71.4	69.0 - 73.8	31.2	28.7 - 33.8
AGE GROUP				
18-24	84.0	78.6 - 89.4	29.8	23.2 - 36.4
25-34	76.7	73.3 - 80.0	28.1	24.4 - 31.7
35-44	75.8	72.3 - 79.2	31.7	28.0 - 35.4
45-54	76.4	72.2 - 80.7	32.6	27.4 - 37.9
55-64	72.1	66.6 - 77.6	32.1	26.5 - 37.7
65-74	68.5	63.1 - 74.0	32.9	26.9 - 38.8
75 AND OLDER	46.1	39.1 - 53.0	21.3	16.0 - 26.5
RACE/ETHNICITY				
WHITE	75.2	73.4 - 77.0	31.2	29.1 - 33.2
BLACK	70.2	62.5 - 77.8	34.9	25.1 - 44.7
HISPANIC	56.4	47.4 - 65.5	16.1	10.2 - 21.9
ASIAN	60.8	44.0 - 77.6	15.7	5.8 - 25.5
OTHER	57.9	39.7 - 76.1	19.6	6.6 - 32.6
EDUCATION				
< HIGH SCHOOL	47.7	41.1 - 54.3	16.2	11.5 - 20.9
HIGH SCHOOL	66.7	63.4 - 70.1	24.2	21.1 - 27.3
COLLEGE 1-3 YRS	76.1	72.5 - 79.6	34.0	30.1 - 37.9
COLLEGE 4+ YRS	84.4	82.1 - 86.7	36.1	32.8 - 39.3
HOUSEHOLD INCOME				
<\$25,000	64.5	60.2 - 68.7	26.0	22.0 - 30.0
\$25-34,999	70.2	64.9 - 75.5	24.3	19.2 - 29.3
\$35-49,999	75.6	71.3 - 79.9	28.9	24.3 - 33.4
\$50,000-74,999	79.3	74.9 - 83.7	33.9	29.0 - 38.7
\$75,000+	90.3	87.8 - 92.9	42.7	37.9 - 47.6
EMPLOYMENT				
EMPLOYED	77.8	75.8 - 79.7	30.6	28.2 - 32.9
OUT OF WORK	73.7	65.4 - 82.1	28.5	20.1 - 36.8
UNABLE TO WORK	45.9	34.2 - 57.7	13.5	6.5 - 20.5
HOMEMAKER	76.7	69.8 - 83.5	34.8	25.8 - 43.7
STUDENT	74.0	61.3 - 86.6	31.0	21.1 - 41.0
RETIRED	61.1	56.6 - 65.5	30.2	26.0 - 34.3

Table 6a

Source: Massachusetts BRFSS, 1998

- **Trends over time:**

There has been a slight increase in the percent of adults participating in any leisure time physical activity since 1986, although no real change in the percent of adults who get regular physical activity since 1987.

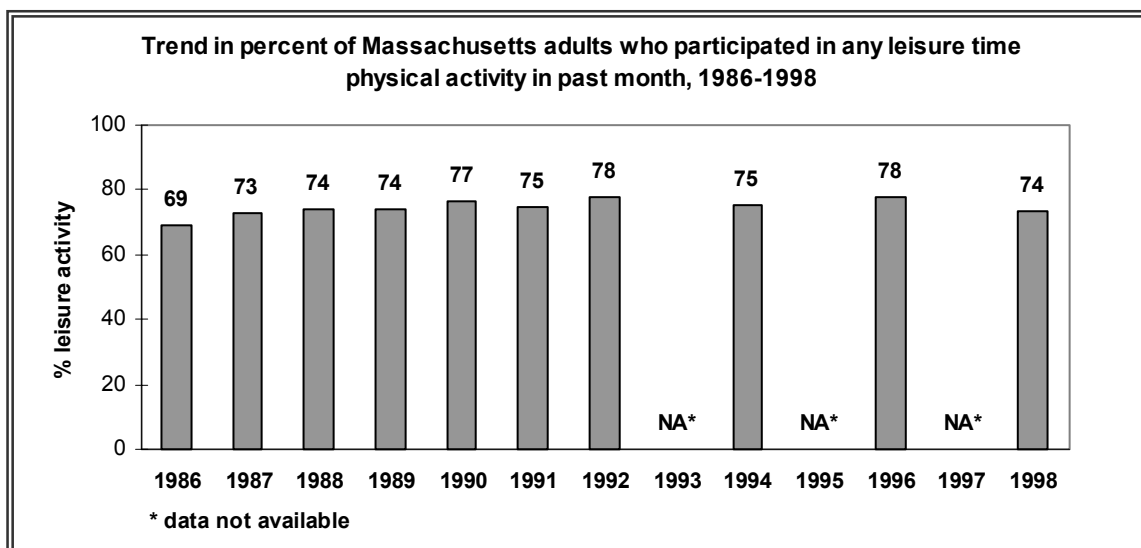


Figure 6a

Source: Massachusetts BRFSS, 1986-1998

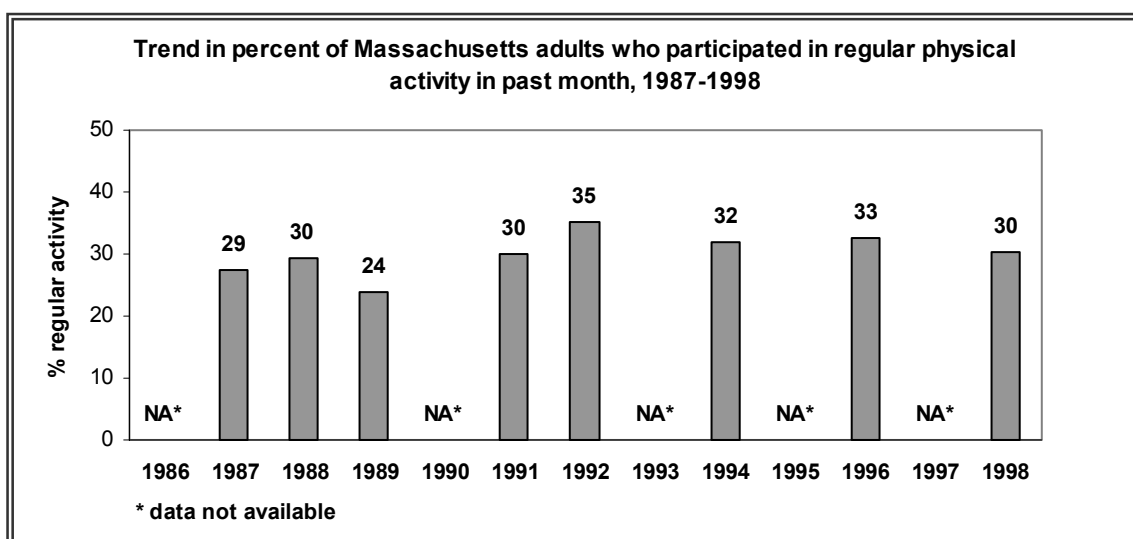


Figure 6b

Source: Massachusetts BRFSS, 1987-1998

- **Comparison with National Data and Healthy People 2000 Objectives:**

In 1998, Massachusetts did not meet the Healthy People 2000 Objectives for the percent of adults who participate in any leisure time physical activity. Compared to other states, Massachusetts had the 21st highest percent of adults who got any leisure time exercise in the past month.

PHYSICAL ACTIVITY	
	ANY LEISURE TIME ACTIVITY
Massachusetts %	73.6 %
US Median %	72.3 %
Range of US States	39.4 – 82.9 %
Massachusetts rank	21 st
Healthy People 2000	85 %

Table 5b

Source: US and MA BRFSS, 1998, HP 2000 Objectives

SECTION 7. WEIGHT CONTROL

All respondents self-reported height and weight. Using Body Mass Index (BMI), calculated by dividing weight in kilograms by height in meters squared, we categorized all adults on weight status. Two BMI standards were used to assess the percent of overweight adults. Using standards adopted by Healthy People 2000 (HP 2000), men were classified as overweight with BMI>27.8 and very overweight with BMI>31.1. Women were overweight with BMI>27.3 and very overweight with BMI>32.3. Using standards adopted by Healthy People 2010 (HP 2010), both men and women were overweight with BMI>25, and very overweight with BMI >30.

In 1998, 26% of Massachusetts adults were overweight based on HP 2000 standards. Men were more likely to be overweight than women, and Asians were less likely compared to other races. The percent of overweight adults increased until age 65, and then decreased. Overweight status was associated with education, but not income. According to HP 2010 standards, 50% of Massachusetts adults were overweight. Compared to the older standards, the prevalence based on newer standards substantially increased across all demographics, although the overall associations remained. 14% of adults were very overweight based on HP 2010 standards.

WEIGHT CONTROL AMONG MASSACHUSETTS ADULTS, 1998						
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>						
	OVERWEIGHT (HP 2000 STANDARDS)		OVERWEIGHT (HP 2010 STANDARDS)		VERY OVERWEIGHT (HP 2010 STANDARDS)	
	%	95% CI	%	95% CI	%	95% CI
OVERALL	26.3	24.5 - 28.1	50.1	48.0 - 52.2	14.2	12.8 - 15.7
GENDER						
MALE	30.5	27.6 - 33.4	61.9	58.9 - 65.0	17.6	15.2 - 19.9
FEMALE	22.2	20.0 - 24.4	38.4	35.6 - 41.1	11.0	9.4 - 12.6
AGE GROUP						
18-24	17.2	12.0 - 22.3	31.3	24.6 - 37.9	9.9	5.6 - 14.2
25-34	22.7	19.3 - 26.2	48.8	44.5 - 53.0	12.4	9.7 - 15.1
35-44	27.3	23.4 - 31.2	51.1	46.9 - 55.3	13.4	10.6 - 16.2
45-54	32.8	27.5 - 38.2	57.6	52.3 - 63.0	20.2	15.7 - 24.7
55-64	34.4	28.4 - 40.5	57.8	51.2 - 64.3	20.0	14.6 - 25.4
65-74	32.6	26.7 - 38.5	59.4	53.2 - 65.6	17.3	12.7 - 21.9
75 AND OLDER	20.0	14.6 - 25.5	48.4	41.4 - 55.8	7.3	4.1 - 10.6
RACE/ETHNICITY						
WHITE	26.4	24.4 - 28.3	49.5	47.2 - 51.7	13.9	12.4 - 15.4
BLACK	42.3	32.9 - 51.8	68.0	58.8 - 77.1	27.4	18.4 - 36.4
HISPANIC	28.0	19.7 - 36.4	60.2	51.1 - 69.3	16.4	8.9 - 23.9
ASIAN	4.5	0.1 - 9.0	21.6	9.0 - 34.1	2.4	0.0 - 5.5
OTHER	20.1	7.6 - 32.6	57.5	39.4 - 75.7	14.9	3.9 - 25.8
EDUCATION						
< HIGH SCHOOL	34.8	28.2 - 41.5	60.3	53.5 - 67.2	18.8	13.7 - 23.9
HIGH SCHOOL	27.7	24.4 - 31.0	52.6	48.8 - 56.5	15.0	12.5 - 17.5
COLLEGE 1-3 YRS	27.3	23.7 - 30.9	48.9	44.7 - 53.2	14.3	11.5 - 17.1
COLLEGE 4+ YRS	22.6	19.5 - 25.6	46.2	42.7 - 49.7	12.5	10.0 - 15.1
HOUSEHOLD INCOME						
<\$25,000	26.6	22.7 - 30.4	45.5	40.9 - 50.1	14.7	11.6 - 17.8
\$25-34,999	22.4	17.6 - 27.1	46.4	40.4 - 52.4	13.2	9.4 - 16.9
\$35-49,999	28.8	24.1 - 33.5	55.3	50.1 - 60.5	16.4	12.4 - 20.5
\$50,000-74,999	27.8	22.9 - 32.6	56.1	50.8 - 61.3	15.5	11.6 - 19.5
\$75,000+	26.4	21.7 - 31.2	50.4	45.3 - 55.5	11.6	8.4 - 14.9
EMPLOYMENT						
EMPLOYED	26.8	24.5 - 29.2	50.6	48.0 - 53.2	14.1	12.3 - 15.9
OUT OF WORK	19.2	12.3 - 26.1	45.1	35.2 - 55.0	12.9	6.8 - 18.9
UNABLE TO WORK	54.4	42.2 - 66.6	68.2	56.7 - 79.7	36.2	23.9 - 48.6
HOMEMAKER	18.0	11.9 - 24.1	32.8	24.4 - 41.2	10.2	5.6 - 14.7
STUDENT	17.1	8.0 - 26.1	30.6	19.6 - 41.7	12.1	3.9 - 20.2
RETIRED	26.7	22.7 - 30.7	55.7	50.9 - 60.4	14.1	10.9 - 17.3

Table 7a

Source: Massachusetts BRFSS, 1998

- **Trends over time:**

There have been significant increases in the percent of adults who are overweight and very overweight since 1986, based on either Healthy People 2010 standards or Healthy People 2000 standards.

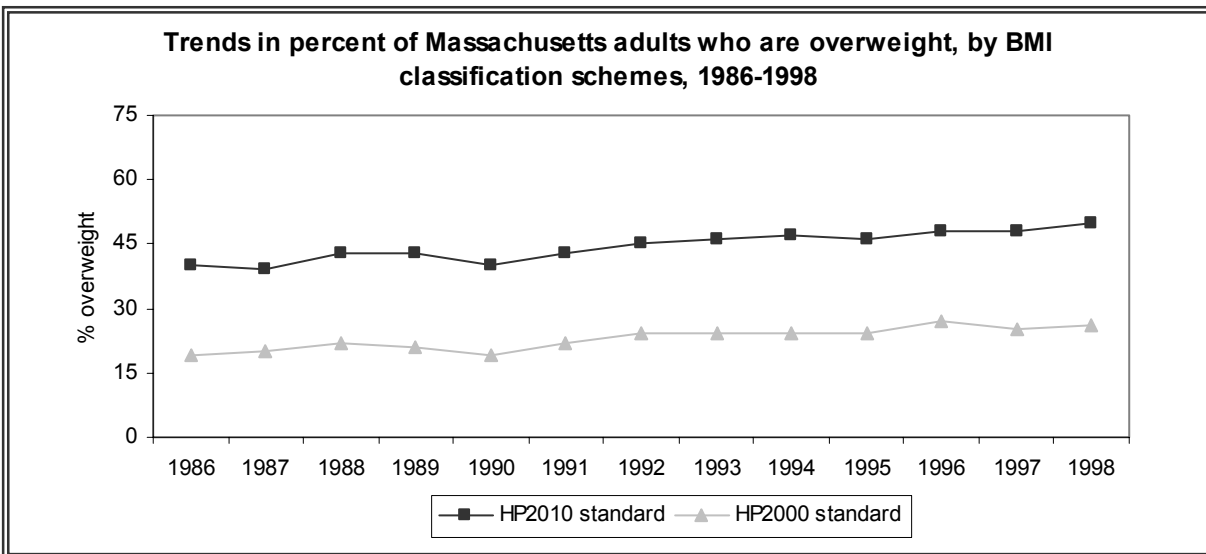


Figure 7a

Source: Massachusetts BRFSS, 1986-1998

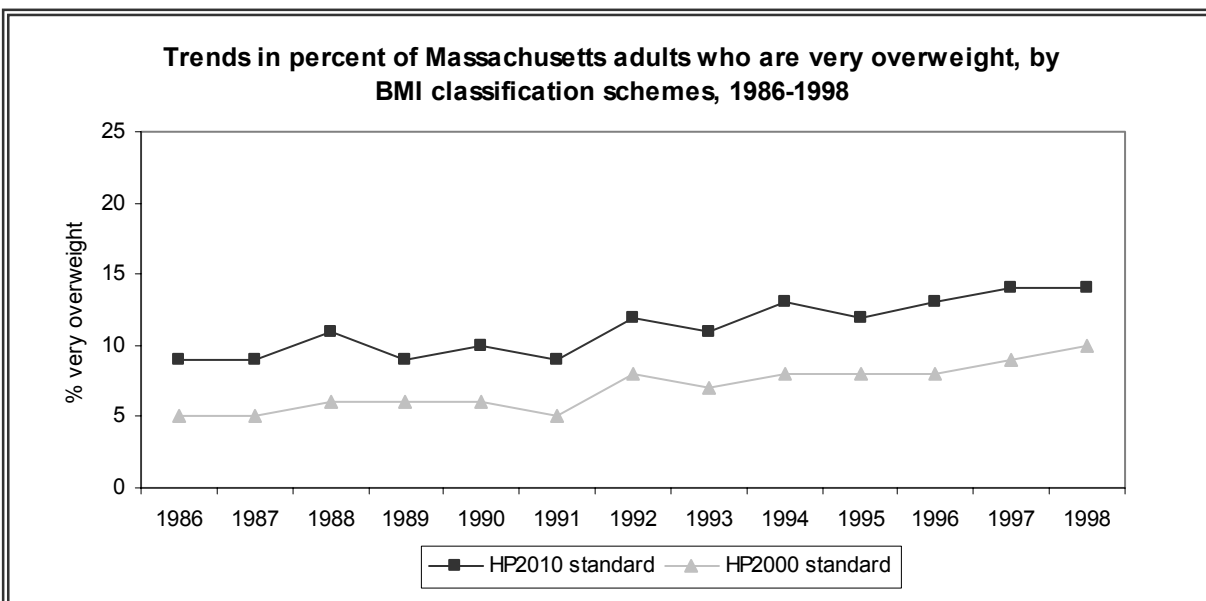


Figure 7b

Source: Massachusetts BRFSS, 1986-1998

- **Comparison with National Data and Healthy People 2000 Objectives:**

In 1998, Massachusetts did not meet the Healthy People 2000 Objectives for the percent of adults who were overweight. Compared to other states in 1998, Massachusetts had the 2nd lowest percent of adults who were overweight.

WEIGHT CONTROL	
Massachusetts %	26.3 %
US Median %	32.4 %
Range of US States	22.5 - 37.8 %
Massachusetts rank	2nd
Healthy People 2000	20 %

Table 7b

Source: US and MA BRFSS, 1998, HP 2000 Objectives

Box 7. RESEARCH BRIEFS ON WEIGHT CONTROL

Changes in guidelines on Overweight

The World Health Organization (WHO) released new guidelines on categorizing adults as overweight in 1995. These guidelines were developed to be more in line with recent medical evidence on the relationship between obesity and health. Epidemiological studies had shown that the risk of morbidity and mortality related to several chronic conditions increased steadily with increasing BMI, and that BMI = 25.0 is a critical cutoff for accurately categorizing risk. Healthy People 2010 (HP2010) adopted these cutoffs as standards for health objectives.

Standards used by HP 2010 consistently categorize a substantially larger proportion of adults as overweight compared to Healthy People 2000 (HP2000) (Table 7c). There were certain groups who were disproportionately affected by the HP 2010 standards. There were greater increases in the proportion of men and Hispanics classified as overweight by HP 2010 who were previously not classified as overweight based on HP 2000 standards and smaller increases among adults age 18-24.

Trends in the prevalence of overweight

The percent of adults who are overweight (based on HP 2010 standards) has increased markedly overtime. Both men and women have experienced similar increases in the proportion of adults who were overweight over time, while for any given year men were much more likely to be classified as overweight compared to women. In order to assess trends over time by race, we analyzed two years of data for stability. Since 1986, there has been a 1.5% annual increase in the percent of black adults categorized as overweight, compared to a .7% increase among white adults (Figure 7c).

Prevalence of overweight, by race and gender

Blacks were more likely to be overweight and very overweight compared to other races, using HP 2010 standards. The proportion of overweight men was notably greater than the proportion of overweight women in all race groups except for blacks, using HP 2010 standards (Figure 7d).

	Percent Difference (HP 2010-HP 2000)	95% CI
gender		
men	31.4	27.8 - 35.0
women	16.2	12.7 - 19.7
age		
18-24	14.1	9.3 - 18.9
25-34	26.1	23.9 - 28.3
35-44	23.8	21.3 - 26.3
45-54	24.8	21.3 - 28.3
55-64	23.4	19.3 - 27.5
65-74	26.8	23.0 - 30.6
75+	28.4	25.2 - 31.6
race		
white, nh	23.1	21.8 - 24.4
black, nh	25.7	19.0 - 32.4
Hispanic	32.2	26.5 - 37.9
Asian	17.1	14.3 - 19.9

Table 7c

Source: MA BRFSS, 1998

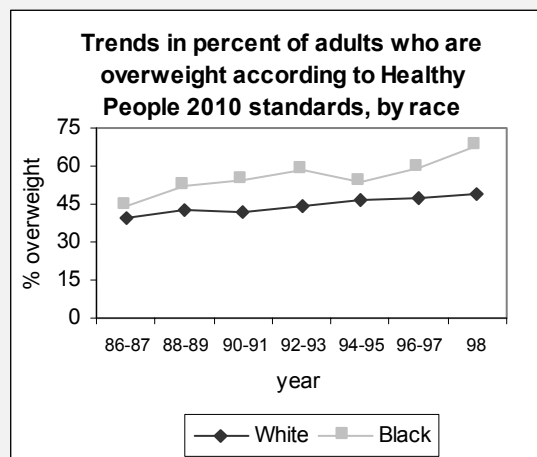


Figure 7c

Source: MA BRFSS, 1986 - 1998

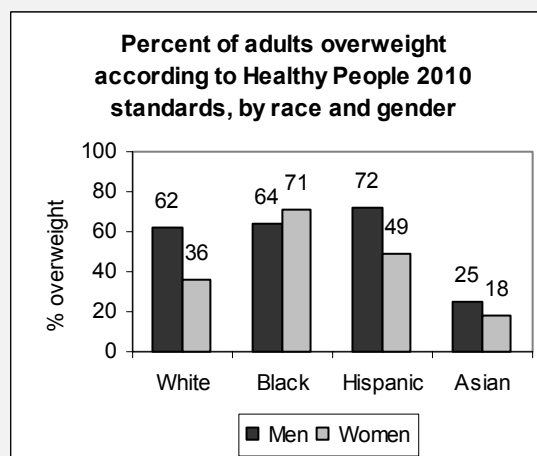


Figure 7d

Source: MA BRFSS, 1998

SECTION 8. FRUIT AND VEGETABLE CONSUMPTION

All respondents were asked about their usual fruit and vegetable consumption. Sufficient fruits and vegetables was defined as 5 or more servings per day, which meets the Recommended Daily Allowance (RDA) standards.

In 1998, 31% of Massachusetts adults consumed sufficient fruits and vegetables. Women were more likely than men to meet the RDA guidelines. A higher percent of adults 65 and older ate sufficient fruits and vegetables. Hispanics were less likely to meet this standard. There was an increasing trend in fruit and vegetable consumption with increasing levels of education, but not with income.

FRUIT AND VEGETABLE CONSUMPTION AMONG MASSACHUSETTS ADULTS, 1998		
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>		
	5+ SERVINGS FRUIT AND VEGETABLES PER DAY	
	%	95% CI
OVERALL	30.5	28.7 - 32.4
GENDER		
MALE	24.8	22.2 - 27.5
FEMALE	35.7	33.1 - 38.3
AGE GROUP		
18-24	29.2	22.5 - 35.9
25-34	23.1	19.7 - 26.6
35-44	28.2	24.6 - 31.7
45-54	30.1	25.2 - 35.1
55-64	31.3	25.8 - 36.7
65-74	40.8	34.9 - 46.7
75 AND OLDER	47.2	40.2 - 54.3
RACE/ETHNICITY		
WHITE	30.9	28.9 - 32.9
BLACK	29.3	20.6 - 38.0
HISPANIC	21.0	13.7 - 28.3
ASIAN	39.4	23.0 - 55.9
OTHER	19.4	5.7 - 33.1
EDUCATION		
< HIGH SCHOOL	23.4	18.2 - 28.5
HIGH SCHOOL	28.3	25.0 - 31.7
COLLEGE 1-3 YRS	30.9	27.0 - 34.7
COLLEGE 4+ YRS	34.1	30.9 - 37.2
HOUSEHOLD INCOME		
<\$25,000	31.9	27.4 - 36.3
\$25-34,999	27.4	22.2 - 32.5
\$35-49,999	30.2	25.4 - 35.1
\$50,000-74,999	26.3	21.8 - 30.8
\$75,000+	34.4	29.9 - 39.0
EMPLOYMENT		
EMPLOYED	26.8	24.6 - 29.0
OUT OF WORK	19.2	11.8 - 26.7
UNABLE TO WORK	21.6	12.8 - 30.5
HOMEMAKER	46.5	37.5 - 55.4
STUDENT	38.8	26.4 - 51.2
RETIRED	42.3	37.8 - 46.8

Table 8a

Source: Massachusetts BRFSS, 1998

- **Trends over time:**

There has been a slight increase in the percent of adults who eat sufficient fruits and vegetables since 1991.

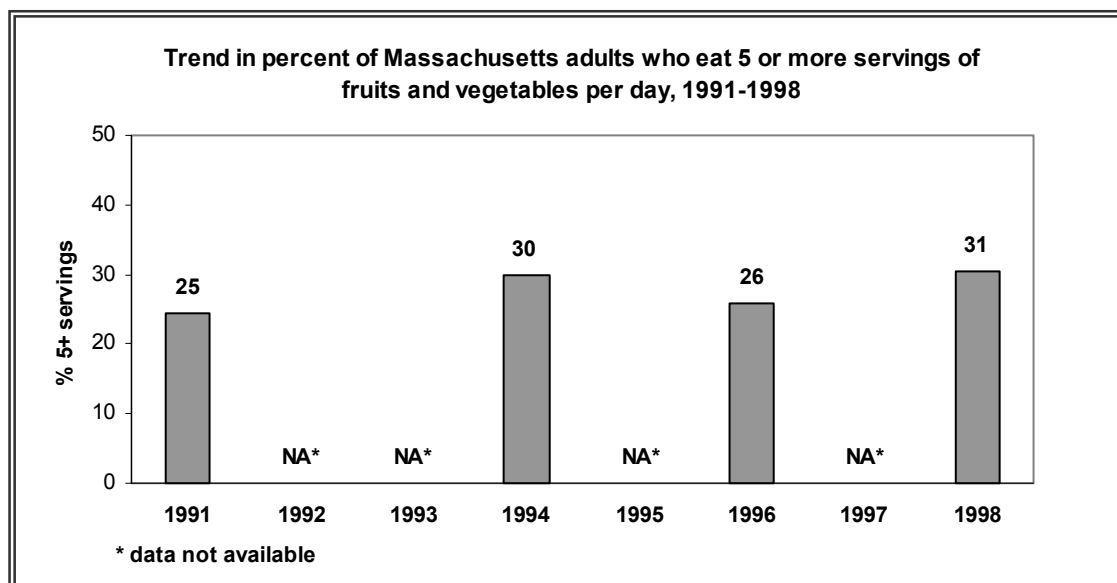


Figure 8a

Source: Massachusetts BRFSS, 1991-1998

- **Comparison with National Data and Healthy People 2000 Objectives:**

In 1998, Massachusetts did not meet the Healthy People 2000 Objectives for the percent of adults who ate 5+ servings of fruits and vegetables. Compared to other states, Massachusetts had the 2nd highest percent of adults who met the RDA for fruits and vegetables.

5+ SERVINGS FRUITS AND VEGETABLES	
Massachusetts %	30.5 %
US Median %	23.8 %
Range of US States	8.3 - 31.9 %
Massachusetts rank	2nd
Healthy People 2000	50 %

Table 8b

Source: US and MA BRFSS, 1998, HP 2000 Objectives

SECTION 9. CHRONIC DISEASE

All respondents were asked if they had ever been told by a doctor that they have heart disease, diabetes, or asthma. The analysis on heart disease was restricted to adults 45 and older, based on the increasing prevalence of heart disease in this group. Women who had diabetes only during pregnancy were considered to not have diabetes.

In 1998, 14% of adults age 45 and older had ever been told they had heart disease. The lifetime prevalence of heart disease was greater for men than women, increased significantly with age, and was strongly related to socioeconomic indicators. Whites and Hispanics were more likely to have had heart disease. Almost 4% of adults reported that they had diabetes. The prevalence of diabetes increased among adults 45 and older, among adults with less than a high school education or who were unable to work. Approximately 9% of Massachusetts adults had ever been told they have asthma. A substantial proportion of adults age 18-24 ever had asthma. The prevalence of asthma was not strongly related to income or education.

CHRONIC DISEASE AMONG MASSACHUSETTS ADULTS, 1998						
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>						
	HEART DISEASE, AGE 45 AND OLDER		DIABETES, ALL ADULTS		ASTHMA, ALL ADULTS	
	%	95% CI	%	95% CI	%	95% CI
OVERALL	13.7	11.5 - 15.9	3.8	3.0 - 4.6	8.9	7.7 - 10.1
GENDER						
MALE	17.3	13.1 - 21.4	4.4	3.1 - 5.7	7.9	6.2 - 9.5
FEMALE	10.7	8.6 - 12.8	3.3	2.4 - 4.2	9.6	7.9 - 11.3
AGE GROUP						
18-24	--	--	0.2	0.0 - 0.5	17.6	12.4 - 22.7
25-34	--	--	0.7	0.2 - 1.2	8.6	6.3 - 10.8
35-44	--	--	1.7	0.9 - 2.4	8.3	5.9 - 10.6
45-54	3.4	2.1 - 4.6	3.9	2.2 - 5.6	8.0	5.4 - 10.6
55-64	13.2	8.0 - 18.3	8.9	5.4 - 12.3	7.9	4.6 - 11.3
65-74	18.9	14.1 - 23.6	10.6	6.5 - 14.6	4.3	1.6 - 7.0
75 AND OLDER	27.3	20.6 - 34.1	9.7	4.1 - 15.3	5.9	1.5 - 10.3
RACE/ETHNICITY						
WHITE	14.4	12.0 - 16.8	3.9	3.0 - 4.8	9.0	7.7 - 10.3
BLACK	2.7	0 - 5.6	5.8	2.5 - 9.0	6.5	2.7 - 10.3
HISPANIC	10.6	0 - 22.0	1.3	0.5 - 2.1	11.3	5.0 - 17.7
ASIAN	†		1.8	0 - 5.2	5.1	0.7 - 9.5
OTHER	†		2.8	0 - 8.2	7.1	0 - 16.5
EDUCATION						
< HIGH SCHOOL	20.6	13.7 - 27.4	9.3	5.5 - 13.1	10.9	6.2 - 15.6
HIGH SCHOOL	16.1	11.6 - 20.6	4.1	2.6 - 5.6	9.2	6.9 - 11.4
COLLEGE 1-3 YRS	12.9	8.7 - 17.2	2.8	1.7 - 3.8	9.4	7.0 - 11.7
COLLEGE 4+ YRS	10.0	6.6 - 13.4	3.2	1.8 - 4.5	7.5	5.7 - 9.3
HOUSEHOLD INCOME						
<\$25,000	19.1	14.2 - 24.0	5.7	3.8 - 7.6	8.8	6.0 - 11.6
\$25-34,999	14.5	9.1 - 20.0	3.1	1.4 - 4.9	7.3	4.3 - 10.2
\$35-49,999	9.0	5.2 - 12.8	2.7	1.2 - 4.1	10.1	6.9 - 13.3
\$50,000-74,999	11.9	4.3 - 19.5	3.3	0.8 - 5.8	8.4	5.8 - 11.0
\$75,000+	10.7	3.7 - 17.7	3.8	1.7 - 6.0	8.7	6.1 - 11.2
EMPLOYMENT						
EMPLOYED	6.0	3.3 - 8.7	2.2	1.5 - 2.9	9.1	7.7 - 10.5
OUT OF WORK	14.1	3.7 - 24.6	1.3	0.2 - 2.4	8.8	3.7 - 14.0
UNABLE TO WORK	29.6	17.2 - 42.1	17.6	9.9 - 25.3	18.7	6.8 - 30.6
HOMEMAKER	7.6	1.8 - 13.3	2.7	0 - 6.4	12.6	6.4 - 18.8
STUDENT	†		0.3	0 - 0.9	15.6	7.4 - 23.7
RETIRED	22.4	18.3 - 26.4	10.1	7.0 - 13.2	3.9	1.9 - 6.0

Table 9a

Source: Massachusetts BRFSS, 1998

† insufficient sample size

- **Trends over time:**

Since 1992, there has been no change in the percent of adults age 45 and older who reported ever being told they have heart disease. There also has been no change in the percent of adults 18 and older who reported having diabetes since 1989.

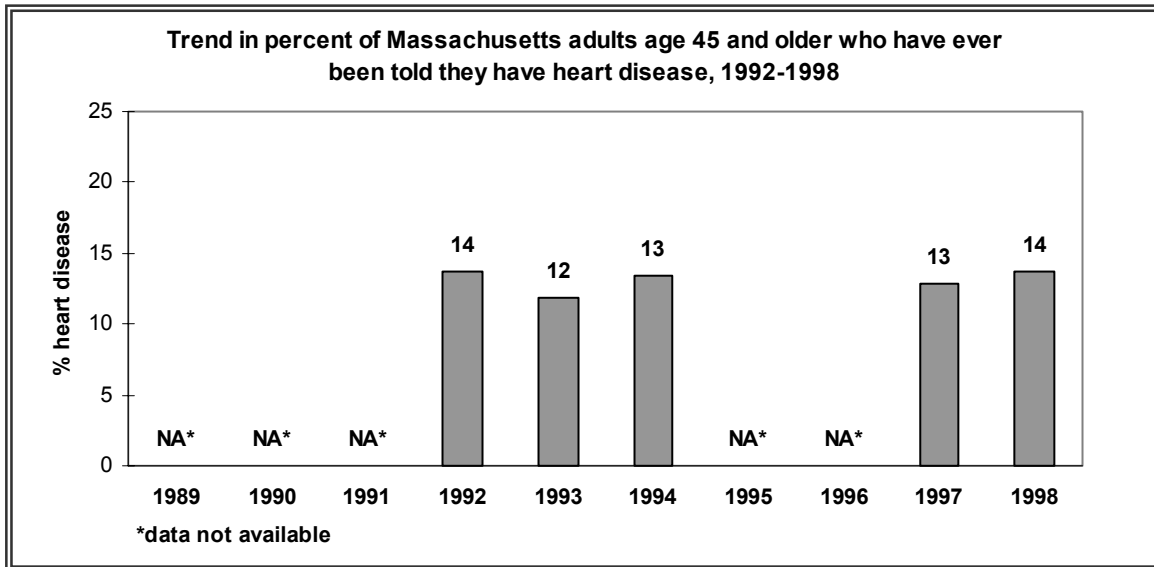


Figure 9a

Source: Massachusetts BRFSS, 1992-1998

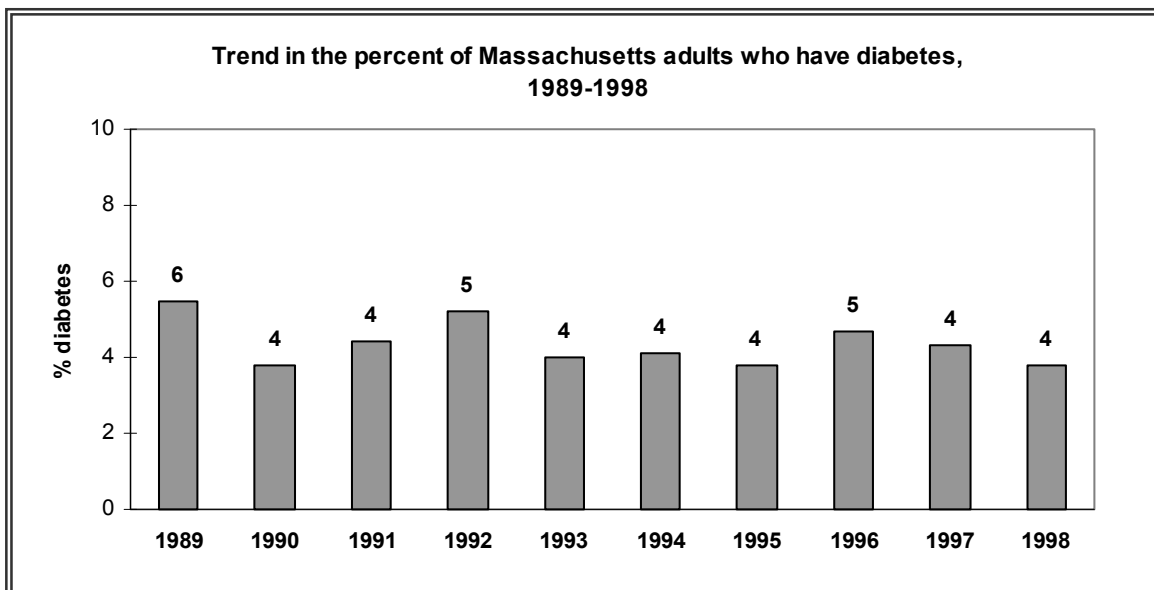


Figure 9b

Source: Massachusetts BRFSS, 1989-1998

- **Comparison with National Data and Healthy People 2000 Objectives:**

Compared to other states in 1998, Massachusetts had the 7th lowest prevalence of diabetes.

CHRONIC DISEASES	
	EVER TOLD HAD DIABETES
Massachusetts %	3.8 %
US Median %	5.4 %
Range of US States	2.8 - 9.4 %
Massachusetts rank	7th
Healthy People 2000	NA

Table 9b

Source: US and MA BRFSS, 1998

BOX 9. RESEARCH BRIEFS ON CHRONIC DISEASES

Risk Factors for Cardiovascular Disease

The BRFSS collects data on several risk factors for cardiovascular disease. Figure 9c presents the frequency distribution of Massachusetts adults who participate in the following modifiable risk factors for cardiovascular disease: smoking, diabetes, eating less than five servings of fruits and vegetables per day, being overweight based on HP2010 standards, and not getting regular physical activity. Approximately 94% of the population had at least one major risk factor for cardiovascular disease, and 39% had three or more risk factors.

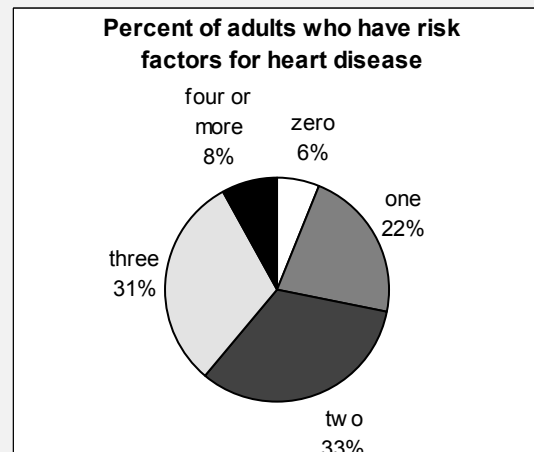


Figure 9c

Source: MA BRFSS, 1998

Asthma

In 1998, asthma affected 10% of all children younger than 18 years of age. The prevalence of asthma increased sharply with increasing age (Figure 9d).

Because smoke inhalation can trigger an asthma attack, we assessed the proportion of children with and without asthma who were potentially exposed to smoking at home. Among children with asthma, 44% lived in a household where an adult smoked, compared to 36% of children without asthma. Approximately 47% of children with asthma and 40% of those without asthma lived in a household where smoking was permitted in the house either sometimes or anywhere (Figure 9e).

Given the proportion of children who are potentially exposed to smoke inhalation at home, these data support that a substantial percent of children with and without asthma are at increased risk of tobacco-related morbidity.

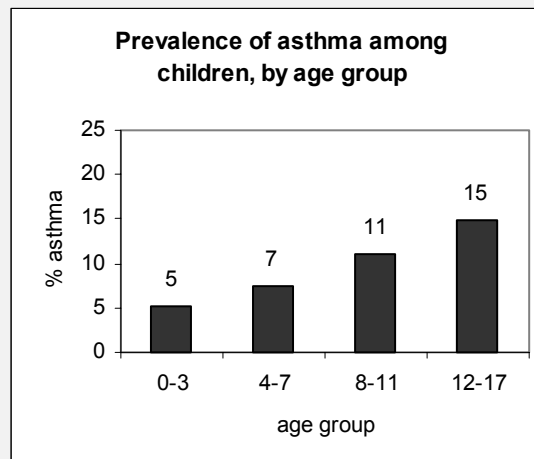


Figure 9d

Source: MA BRFSS, 1998

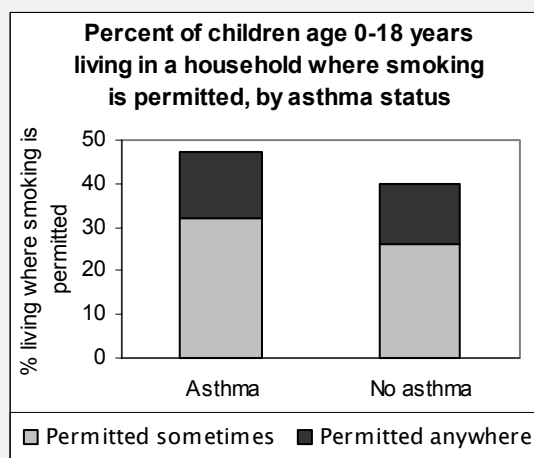


Figure 9e

Source: MA BRFSS, 1998

BOX 9 CONTINUED. RESEARCH BRIEFS ON CHRONIC DISEASES

Diabetes

People with diabetes have an increased risk of developing heart disease and stroke. The prevalence of risk factors for heart disease in this group may also differ compared to those without diabetes. The BRFSS includes questions about heart disease and stroke, as well as questions about risk factors for heart disease. Table 9c compares the prevalence of cardiovascular disease and cardiovascular risk factors in those with and without diabetes, adjusting* for age and sex differences in the two groups. Data from the 1997 and 1998 survey were combined in order to provide a larger sample of people with diabetes. People with diabetes had a higher occurrence of heart disease and stroke. Prevalence of most risk factors was higher in the group with diabetes compared to the group without diabetes.

* see glossary

Diabetes Preventive Care

Diabetes may lead to many serious conditions, including blindness, renal failure, cardiovascular disease, mobility impairment, and lower extremity amputation. Preventive care such as blood sugar control and regular foot and eye examinations may reduce such complications. In the BRFSS, questions regarding diabetes preventive care knowledge and practice were asked of people with diabetes. Table 9d summarizes preventive care knowledge and practice among people with diabetes in 1997-1998.

Hispanics and Health: the Role of Language

The Massachusetts BRFSS survey is conducted in English, Spanish and Portuguese. From 1996 to 1998, we interviewed 863 Hispanics, 646 of whom answered in English and 217 of whom responded in Spanish. We compared Hispanics on a variety of chronic disease risk factors and preventive behaviors to evaluate whether there were differences associated with language. Hispanics who answered in Spanish were much less likely to be overweight (BMI>25.0) less likely to be a smoker, but more likely to report being in fair/poor health (Figure 9f).

Prevalence and risk factors for cardiovascular disease

	Diabetes	No Diabetes (age/sex adjusted)
Heart disease	29.4	13.3
Stroke	12.0	3.6
High blood pressure	51.7	31.9
Elevated cholesterol	37.6	31.4
Overweight	79.0	53.3
Very overweight	37.1	14.4
Current smokers	10.2	14.4
Insufficient physical activity	75.2	69.6
Inadequate fruit and vegetable consumption	64.8	63.9

Table 9c

Source: BRFSS 1997-1998

Preventive Care Knowledge and Practice among Adults with Diabetes

	%
Insulin Use	35.7
Glucose self-monitoring	85.0
Glucose self-monitoring among insulin users	96.2
Knowledge of HbA _{1c}	38.0
HbA _{1c} checked in past year among those with knowledge of HbA _{1c}	91.5
Visit health professional for diabetes within year	91.2
Feet checked by health professional within year	82.5
Eye exam in past year	84.6

Table 9d

Source: BRFSS 1997-1998

* The hemoglobin A1C (HbA_{1c}) test indicates how well diabetes is controlled by providing a measure of average blood sugar control over 2 to 3 months.

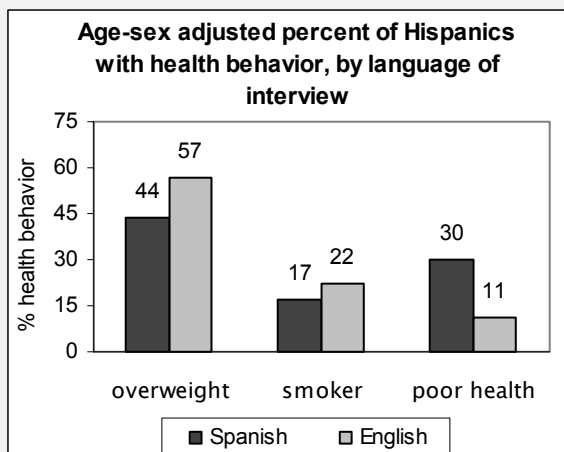


Figure 9f

Source: MA BRFSS, 1996-1998

SECTION 10. OSTEOPOROSIS

Although all respondents were asked if they had ever been told they have osteoporosis, analyses were restricted to women 45 and older, based on the increasing prevalence among this group. All women were asked about calcium intake through diet and supplementation. Sufficient calcium was defined as 3+ servings of dairy per day, calcium supplements daily, or a combination of 2 servings of dairy per day AND supplements at least half the days of the previous month.

In 1998, over 12% of women 45 and older had been told they had osteoporosis. The prevalence of osteoporosis increased greatly with increasing age. Income and education were modestly associated with having osteoporosis. More than 37% of all women got sufficient calcium through dairy or supplementation. Women 45 and older were more likely to intake sufficient calcium than younger women. A smaller percent of Hispanic women got sufficient calcium compared to white women. Calcium intake increased with increasing education. The pattern with income was less clear.

OSTEOPOROSIS AMONG MASSACHUSETTS WOMEN, 1998				
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>				
	OSTEOPOROSIS, AGE 45+		SUFFICIENT CALCIUM, ALL AGES	
	%	95% CI	%	95% CI
OVERALL	12.5	9.8 - 15.2	37.2	34.6 - 39.8
AGE GROUP				
18-24	--		25.9	16.7 - 35.1
25-34	--		31.5	26.4 - 36.5
35-44	--		31.8	26.9 - 36.7
45-54	4.6	1.8 - 7.5	47.2	40.2 - 54.2
55-64	11.0	5.7 - 16.4	41.9	34.0 - 49.8
65-74	20.0	13.6 - 26.4	49.6	41.7 - 57.5
75 AND OLDER	18.1	10.7 - 25.4	43.3	34.3 - 52.3
RACE/ETHNICITY				
WHITE	12.7	9.8 - 15.5	38.4	35.5 - 41.2
BLACK	2.5	0 - 6.8	28.1	16.3 - 39.9
HISPANIC	23.5	0 - 48.8	23.8	15.0 - 32.7
ASIAN	†		29.0	10.8 - 47.2
OTHER	†		†	
EDUCATION				
< HIGH SCHOOL	12.0	4.5 - 19.5	32.6	24.0 - 41.3
HIGH SCHOOL	14.0	9.3 - 18.8	35.0	30.5 - 39.6
COLLEGE 1-3 YRS	13.8	8.1 - 19.5	37.9	32.5 - 43.4
COLLEGE 4+ YRS	8.8	4.4 - 13.1	40.5	36.1 - 44.9
HOUSEHOLD INCOME				
<\$25,000	11.3	6.4 - 16.2	39.8	33.8 - 45.7
\$25-34,999	13.3	5.1 - 21.6	35.5	28.3 - 42.7
\$35-49,999	10.5	3.1 - 17.8	29.8	23.9 - 35.6
\$50,000-74,999	8.8	3.7 - 14.0	41.1	34.0 - 48.2
\$75,000+	7.8	1.8 - 13.9	43.0	36.3 - 49.8
EMPLOYMENT				
EMPLOYED	8.5	4.9 - 12.1	33.7	30.4 - 37.0
OUT OF WORK	6.7	0 - 17.4	38.9	27.8 - 50.1
UNABLE TO WORK	12.8	3.2 - 22.4	37.8	19.5 - 56.1
HOMEMAKER	10.3	1.4 - 19.3	42.1	32.7 - 51.4
STUDENT	†		34.1	20.9 - 47.3
RETIRED	17.7	12.9 - 22.5	47.5	41.5 - 53.5

Table 10a

Source: Massachusetts BRFSS, 1998

† insufficient sample size

- **Trends over time:**

Since 1994, there has been a significant increase in the percent of women 18 and older who get sufficient calcium through dairy or calcium supplementation intake.

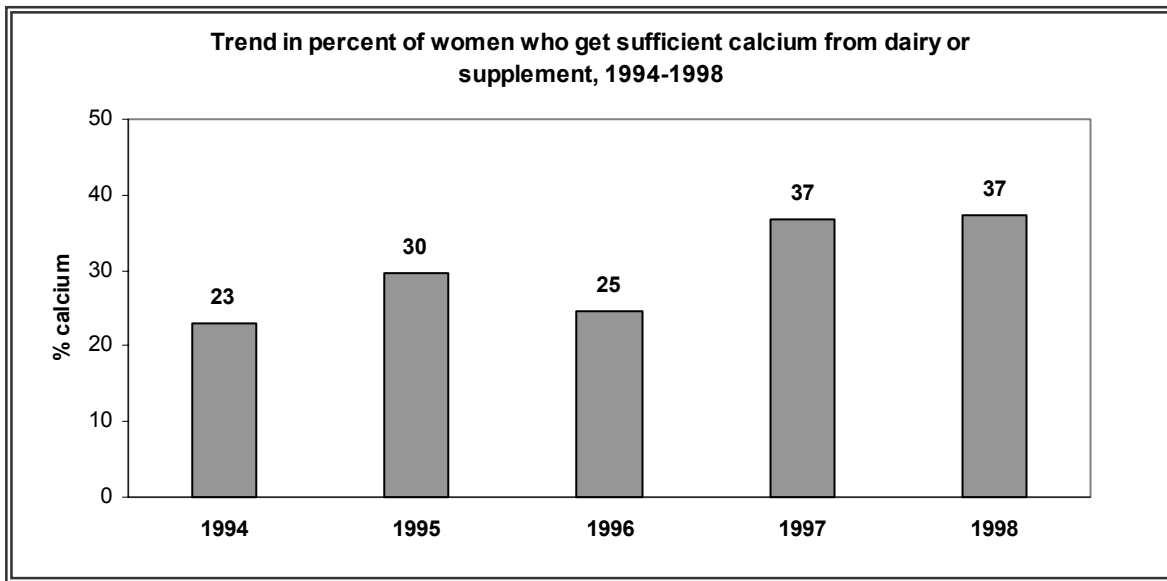


Figure 10a.

Source: Massachusetts BRFSS, 1994-1998

- **Comparison with National Data and Healthy People 2000 Objectives:**

data not available

Box 10. RESEARCH BRIEFS ON OSTEOPOROSIS

Bone Density Exam

Diagnosis of osteoporosis involves screening with a bone density exam (BDE), a procedure similar to an x-ray. In 1997-1998, all women 45 and older were asked whether they ever had a bone density exam. Overall, 26% of women 45 and older said they had a BDE. The percent of women who received a BDE increased with increasing age, education (Figure 10b), and was higher among insured (27%) than uninsured (14%) women.

Risk Factors and Preventive Behaviors

There are several alterable factors by which women can reduce their risk of osteoporosis. Sufficient calcium intake is an important preventive behavior that can reduce a woman's risk of osteoporosis and related sequelae including risk of breaks and falls. We combined 1997-1998 BRFSS data to assess sufficient calcium among women, defined by either 3+ servings dairy per day, calcium supplements daily, or a combination of 2 servings dairy and supplements every other day.

The percent of women who consumed sufficient calcium increased with increasing age. These differences across age groups were due mainly to increased supplement intake among women age 45 and older (Figure 10c). Older women were less likely to get their calcium from dairy products than younger women.

Weight bearing exercises such as walking and strength building are considered to be important preventive behaviors against osteoporosis. Overall, 30% of women do regular strength building exercises including lifting weights, using a weight training machine, or doing push-ups or pull-ups (Figure 10d). Younger women are more likely to participate in strength building compared to older women. 28% of women did some walking as a leisure time physical activity, with no differences across age groups.

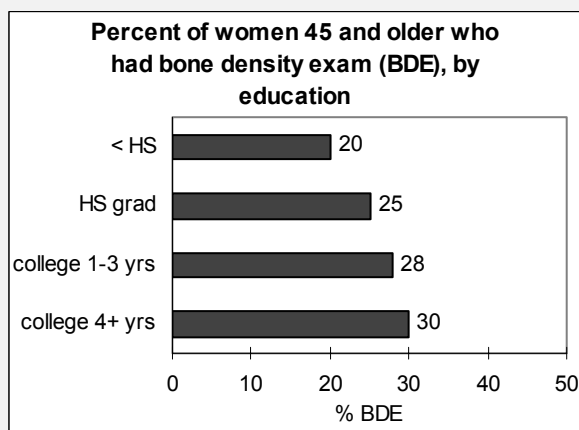


Figure 10b

Source: MA BRFSS, 1997-1998

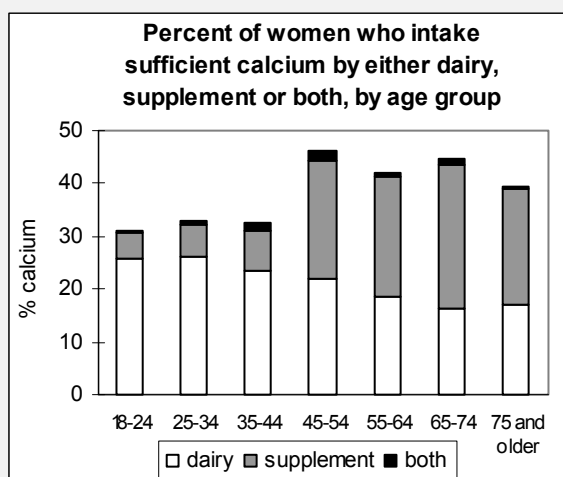


Figure 10c

Source: MA BRFSS, 1997-1998

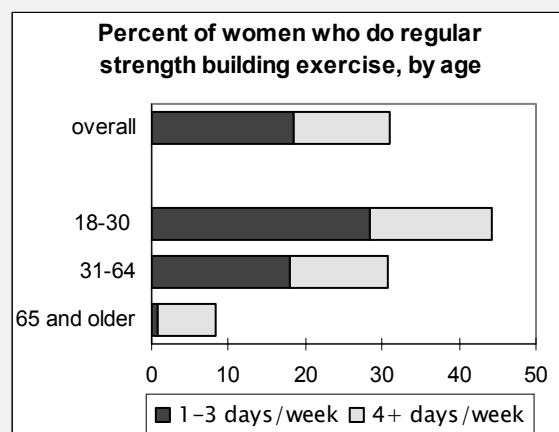


Figure 10d

Source: MA BRFSS, 1997-1998

Box 10 CONTINUED. RESEARCH BRIEFS ON OSTEOPOROSIS

Osteoporosis and BMI

Low body mass index (BMI < 18.5) has been correlated with an increased risk of osteoporosis. We assessed this relationship using 1997-1998 BRFSS data among women age 45 and older. We found that women in the lowest BMI group were more likely to have been told they have osteoporosis than women in other weight groups (Figure 10e).

Incidence of falls and breaks

Osteoporosis is associated with bone loss and fragility, which can increase risk of falls and breaks. Using data combined for 1997-1998, we assessed the incidence of fall-related breaks among Massachusetts men and women 45 and older.

Adults age 45 and older were asked whether they had broken a wrist, hip, or backbone since age 45, at what age this break occurred, and whether the break was related to a fall. This data was used to estimate the incidence rate of fall-related breaks among adults age 45 and older. The incidence rate of breaks of the wrist, hip or backbone was 3.17 per 1000 person-years* among women, and 0.92 per 1000 person-years among men.

There were marked differences in the age-specific incidence rate for men and women (Figure 10f). Among men, the incidence of fall-related breaks remained constant across ages, while the incidence rate increased among women.

We also assessed the relationship between fall-related breaks and osteoporosis status among women. After adjusting* for differences in age, women with osteoporosis were more likely to have had a fall-related break than women without osteoporosis (7.2 vs. 3.9 / 1000 person-years). In addition, the rate of increase in breaks across age groups was greater among women told they have osteoporosis compared to women never told (Figure 10g).

*see glossary

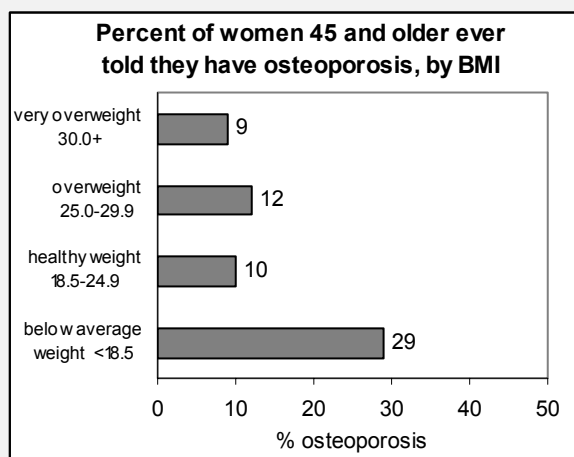


Figure 10e

Source: MA BRFSS, 1997-1998

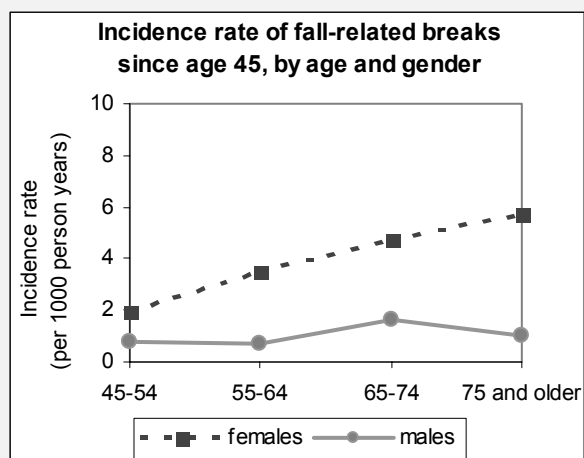


Figure 10f

Source: MA BRFSS, 1997-1998

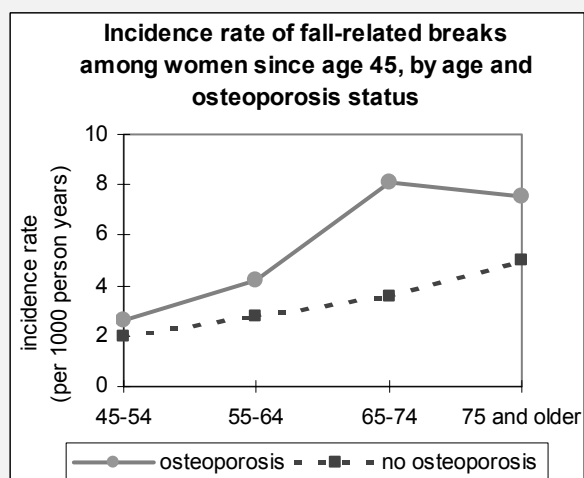


Figure 10g

Source: MA BRFSS, 1997-1998

SECTION 11. DISABILITY AND ACTIVITY LIMITATIONS

In 1998, all respondents were asked about their disabilities and activity limitations. Respondents were defined as having a limitation or disability if they had an impairment or health problem that limited work or activities or caused cognitive difficulties, if they used special equipment or help from others to get around, or if they said they had a disability of any kind. Individuals who reported a limitation or disability were asked how long they had the impairment and if they needed help in handling routine needs or personal care .

In 1998, 17% of adults reported having a long-term limitation or disability of at least one year and 4% of all adults had a limitation that required help with routine activities or personal care. Older adults and those with less education or lower income were more likely to have a long-term impairment. Women were more likely to require help with activities or personal care.

DISABILITY AMONG MASSACHUSETTS ADULTS, 1998				
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>				
	WITH DISABILITY OR LIMITATION		WITH DISABILITY OR LIMITATION <u>AND</u> NEED HELP WITH ACTIVITIES	
	%	95% CI	%	95% CI
OVERALL	17.2	15.6 - 18.8	3.7	3.0 - 4.5
GENDER				
MALE	18.3	15.7 - 20.96	2.3	1.4 - 3.1
FEMALE	16.1	14.2 - 18.0	5.0	3.8 - 6.2
AGE GROUP				
18-24	10.6	6.3 - 15.0	1.1	0.0 - 3.2
25-34	11.0	8.1 - 14.1	2.3	0.8 - 3.9
35-44	13.7	10.6 - 16.8	3.1	1.8 - 4.4
45-54	18.1	14.0 - 22.2	3.6	1.9 - 5.3
55-64	21.3	16.1 - 26.5	4.7	2.2 - 7.2
65-74	26.4	20.8 - 31.9	6.2	3.5 - 9.0
75 AND OLDER	38.6	31.0 - 46.1	9.9	5.9 - 13.8
RACE/ETHNICITY				
WHITE	17.9	16.2 - 19.7	3.9	3.0 - 4.7
BLACK	8.0	4.0 - 12.1	3.3	0.8 - 5.7
HISPANIC	13.1	7.4 - 18.8	1.9	0.7 - 3.1
ASIAN	8.2	0.0 - 18.0	0.6	0.0 - 1.6
OTHER	22.4	6.0 - 38.9	8.0	0.0 - 18.2
EDUCATION				
< HIGH SCHOOL	32.5	26.2 - 38.9	10.4	6.8 - 14.0
HIGH SCHOOL	18.5	15.4 - 21.6	4.5	2.8 - 6.3
COLLEGE 1-3 YRS	17.0	14.0 - 20.0	3.8	2.4 - 5.2
COLLEGE 4+ YRS	12.9	10.3 - 15.4	1.6	1.0 - 2.2
HOUSEHOLD INCOME				
<\$25,000	29.7	25.3 - 34.0	9.3	6.5 - 12.0
\$25-34,999	16.1	11.9 - 20.2	3.9	1.6 - 6.2
\$35-49,999	12.5	8.9 - 16.2	2.4	0.6 - 4.1
\$50,000-74,999	15.3	10.8 - 19.7	0.6	0.0 - 1.7
\$75,000+	11.7	8.2 - 15.3	0.9	0.2 - 1.5
EMPLOYMENT				
EMPLOYED	10.9	9.2 - 12.5	1.4	0.8 - 2.1
OUT OF WORK	26.9	16.7 - 37.1	6.1	2.5 - 9.6
UNABLE TO WORK	94.1	89.5 - 98.6	48.9	35.6 - 62.2
HOMEMAKER	15.2	9.3 - 21.2	3.5	1.2 - 5.7
STUDENT	13.2	5.8 - 20.5	0.0	
RETIRED	33.9	29.1 - 36.8	8.6	6.1 - 11.1

Table 11a

Source: Massachusetts BRFSS, 1998

- **Trends over time:**
data not available
- **Comparison with National Data and Healthy People 2000 Objectives:**
data not available

Box 11. RESEARCH BRIEFS ON DISABILITY AND LIMITATIONS

Type of Health Problem or Disability

17% of adults reported a long-term limitation or disability of one year or more. Among these individuals: 31% reported orthopedic problems including back, neck, bone, and joint injuries; 11% reported arthritis; 17% reported chronic conditions including respiratory and heart disorders as well as stroke, diabetes and cancer; 9% reported trouble with hearing or vision; and 6% reported affective disorders such as depression, anxiety, and emotional problems (Figure 11a). Men were more likely than women to have trouble with hearing or vision and women were more likely to have arthritis. There were no other gender differences in the type of problem reported.

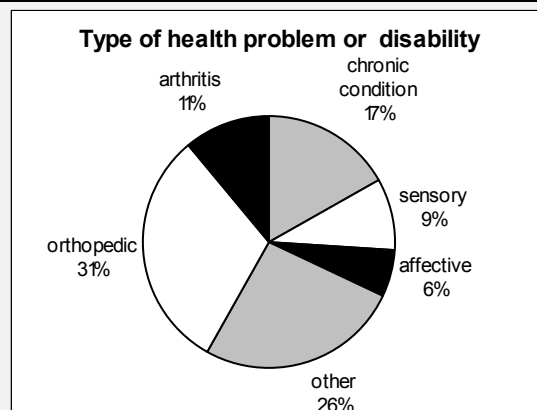


Figure 11a

Source: MA BRFSS, 1998

Overall Health Status

Individuals who require assistance with routine needs or personal care reported fewer healthy days than those who did not require assistance or without any limitation. Men and women, with and without limitations, reported similar numbers of healthy days. These comparisons did not change after adjusting for age (Figure 11b).

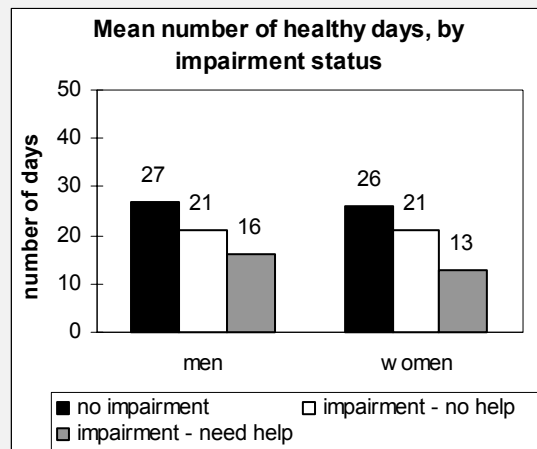


Figure 11b

Source: MA BRFSS, 1998

Smoking Status and Disability

We also compared smoking prevalence among individuals with and without limitations. Adults with impairments were more likely to be current smokers than those without any impairments. In addition, after adjusting for differences in age, adults with impairments who required help with personal care needs or routine activities were much more likely to be smokers than those who did not require help or those who had no impairments (Figure 11c).

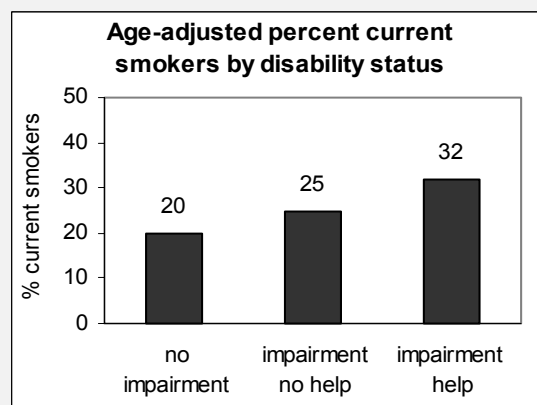


Figure 11c

Source: MA BRFSS, 1998

Box 11 CONTINUED. RESEARCH BRIEFS ON DISABILITY AND LIMITATIONS

Quality of Life and Social Support

The percent of adults who felt sad or depressed for 15 or more days in the previous month varied by both disability status and age (Figure 11d). Overall, 3% of adults with no impairment, 7% of adults with an impairment who do not require help, and 26% of those who needed assistance reported feeling depressed. Among those who required assistance, the percent who were depressed decreased with increasing age, while there was little effect of age on the other groups of adults.

Adults were also asked whether they were generally satisfied with life, and whether they received the social and emotional support they need. After adjusting for differences in age, the percent who were generally satisfied with life varied little by disability status, among adults who always or usually got the support they need (Figure 11e). For adults without impairments, there is little difference in the percent who feel satisfied with life based on adequacy of social support. However, satisfaction with life among adults with a disability or limitation is strongly related to whether someone received social support.

Adults were also asked if they were active in any clubs or organizations, such as community, church, recreation, or volunteer groups. Adults who required assistance were slightly less likely to be active in groups than adults with who did not need help or without impairments.

Disability among Other Household Members

Each adult was asked whether there were other members in their households who had an activity limitation or disability. Over 29% of all adults reported living in a household where at least one member had a disability or was limited in some way due to an impairment or health problem.

Overall, 3% of Massachusetts children age 0-17 had a disability. The percent of children with an impairment or disability increased with increasing age (Figure 11f).

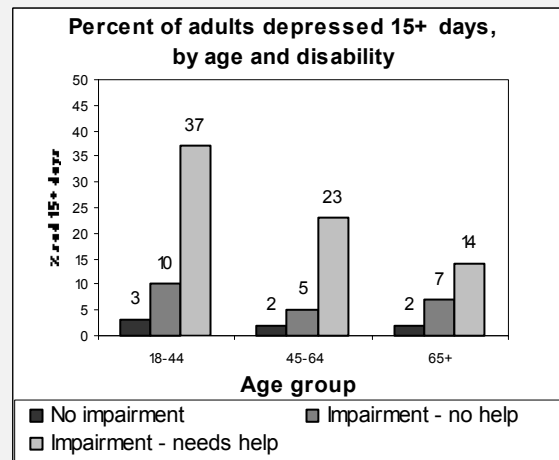


Figure 11d

Source: MA BRFSS, 1998

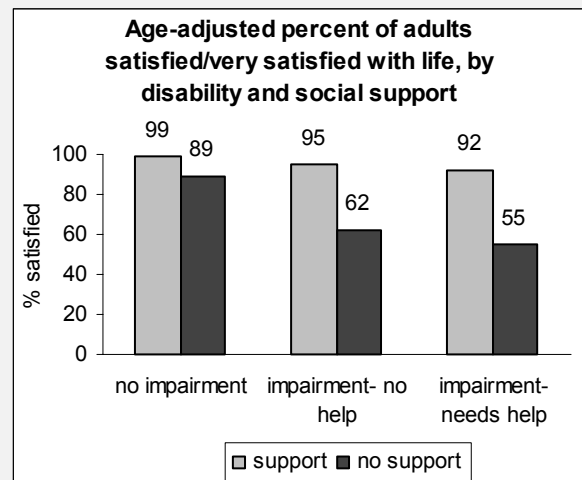


Figure 11e

Source: MA BRFSS, 1998

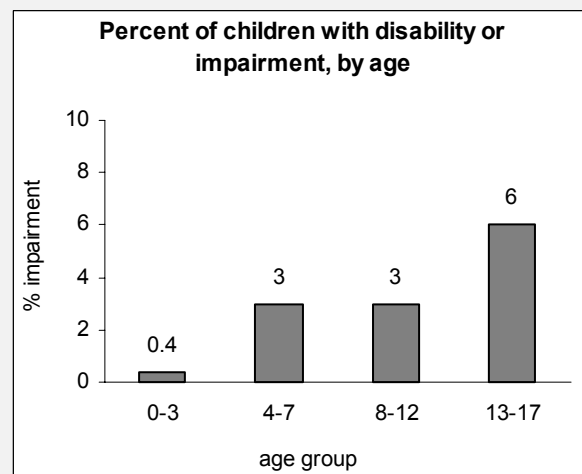


Figure 11f

Source: MA BRFSS, 1998

SECTION 12. BREAST CANCER SCREENING

All female respondents were asked about frequency of breast cancer screening. In this analysis, we looked at the percent of women 40 and older who ever had a mammogram, the percent of women 50 and older who had a mammogram in the past two years, and the percent of all women who had a clinical breast exam (CBE) within two years.

In 1998, 92% of women 40 and older had ever had a mammogram. Women of all races were equally likely to have ever received a mammography screening. There was little relationship between income, education and employment status with mammography screening ever. Almost 84% of women 50 and older received a mammogram within the past 2 years. Women with lower levels of income and education were less likely to have had a recent mammogram. Almost 83% of women 18 and older had a clinical breast exam (CBE) in the previous 2 years. Women less than age 30 and more than age 70 were less likely to have a CBE during this time. An increasing percent of women had a CBE with increasing education and income.

BREAST CANCER SCREENING AMONG MASSACHUSETTS WOMEN, 1998						
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>						
	MAMMOGRAM EVER, AGE 40+		MAMMOGRAM IN PAST 2 YEARS, AGE 50+		CBE IN PAST 2 YEARS, ALL WOMEN	
	%	95% CI	%	95% CI	%	95% CI
OVERALL	91.6	89.8 - 93.5	83.8	80.9 - 86.7	82.5	80.3 - 84.8
AGE GROUP *						
18-29	--		--		78.4	71.6 - 85.2
30-39	--		--		85.5	81.7 89.2
40-49	88.8	84.6 - 92.9	--		89.0	85.8 92.3
50-59	94.3	91.8 - 96.8	87.0	82.9 - 91.1	84.5	79.9 89.0
60-69	94.6	91.4 - 97.8	85.3	79.8 - 90.8	83.1	77.4 88.8
70-79	91.9	87.5 - 96.3	83.9	77.8 - 90.1	75.9	68.3 83.6
80 AND OLDER	88.8	83.2 - 94.3	73.2	63.9 - 82.6	72.2	62.5 - 81.8
RACE/ETHNICITY						
WHITE	91.6	89.6 - 93.5	83.0	79.9 - 86.1	82.5	80.1 - 84.9
BLACK	90.9	81.4 - 100	†		88.5	82.0 - 94.9
HISPANIC	94.2	84.7 - 100	†		76.4	66.9 - 85.9
ASIAN	†		†		80.3	66.2 - 94.4
OTHER	†		†		76.5	58.5 - 94.5
EDUCATION						
< HIGH SCHOOL	89.3	83.4 - 95.1	74.6	64.6 - 84.6	72.7	65.2 - 80.2
HIGH SCHOOL	89.8	86.5 - 93.1	81.5	76.5 - 86.4	80.4	76.9 - 83.9
COLLEGE 1-3 YRS	93.5	90.7 - 96.1	87.0	82.1 - 91.8	80.6	75.2 - 85.9
COLLEGE 4+ YRS	92.9	89.1 - 96.6	88.5	83.3 - 93.7	88.4	85.4 - 91.5
HOUSEHOLD INCOME						
<\$25,000	87.9	83.6 - 92.1	78.4	72.1 - 84.6	76.2	71.1 - 81.3
\$25-34,999	90.1	84.1 - 96.1	81.5	72.0 - 91.0	79.2	73.4 - 84.9
\$35-49,999	90.6	83.3 - 97.9	89.7	83.9 - 95.5	89.1	85.5 - 92.7
\$50,000-74,999	96.9	94.9 - 98.9	91.4	85.6 - 97.3	91.2	87.1 - 95.2
\$75,000+	94.4	90.3 - 98.4	91.3	84.4 - 98.3	90.2	86.3 - 94.1
EMPLOYMENT						
EMPLOYED	91.9	89.1 - 94.6	87.9	84.0 - 91.8	84.1	81.2 - 87.1
OUT OF WORK	91.2	83.4 - 99.1	†		80.7	72.7 - 88.6
UNABLE TO WORK	89.4	78.0 - 100	77.3	61.3 - 93.3	83.9	74.7 - 93.0
HOMEMAKER	92.8	87.6 - 97.9	85.3	73.6 - 97.0	83.4	76.9 - 89.8
STUDENT	†		†		81.4	70.0 - 92.7
RETIRED	91.2	88.2 - 94.1	81.3	76.9 - 85.6	77.2	72.3 - 82.1

Table 12a

Source: Massachusetts BRFSS, 1998

† insufficient sample size

- **Trends over time:**

The percent of women age 18 and older who ever received a clinical breast exam has increased slightly over time since 1992. The percent of women age 40 and older who ever had a mammography screening has increased substantially over time since 1987. In addition, there has been a significant increase since 1992 in the percent of women 50 and older who were screened in the previous two years.

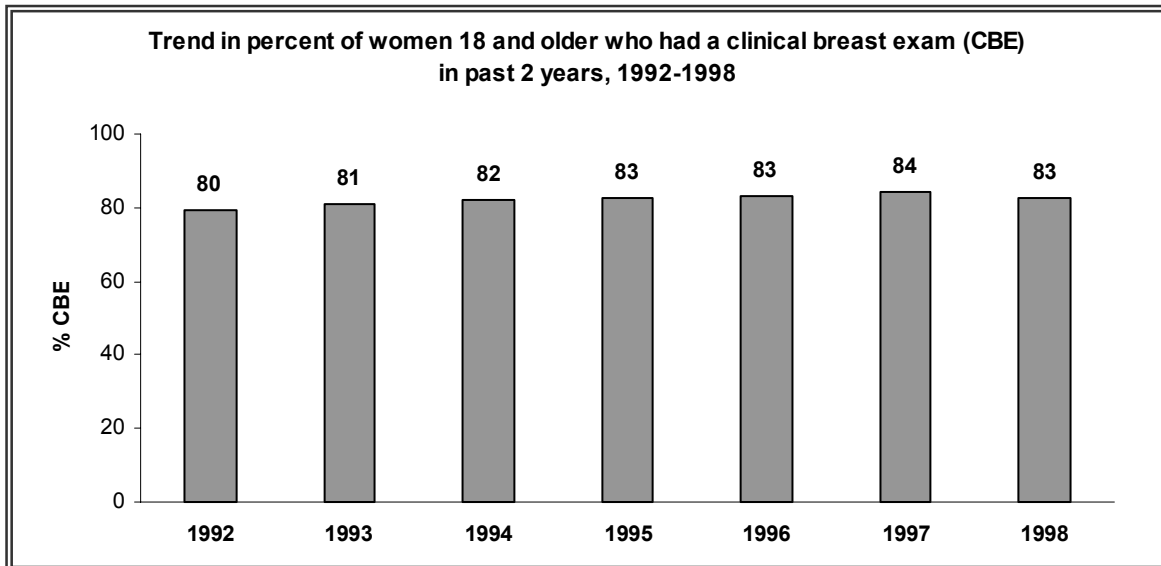


Figure 12a

Source: Massachusetts BRFSS, 1992-1998

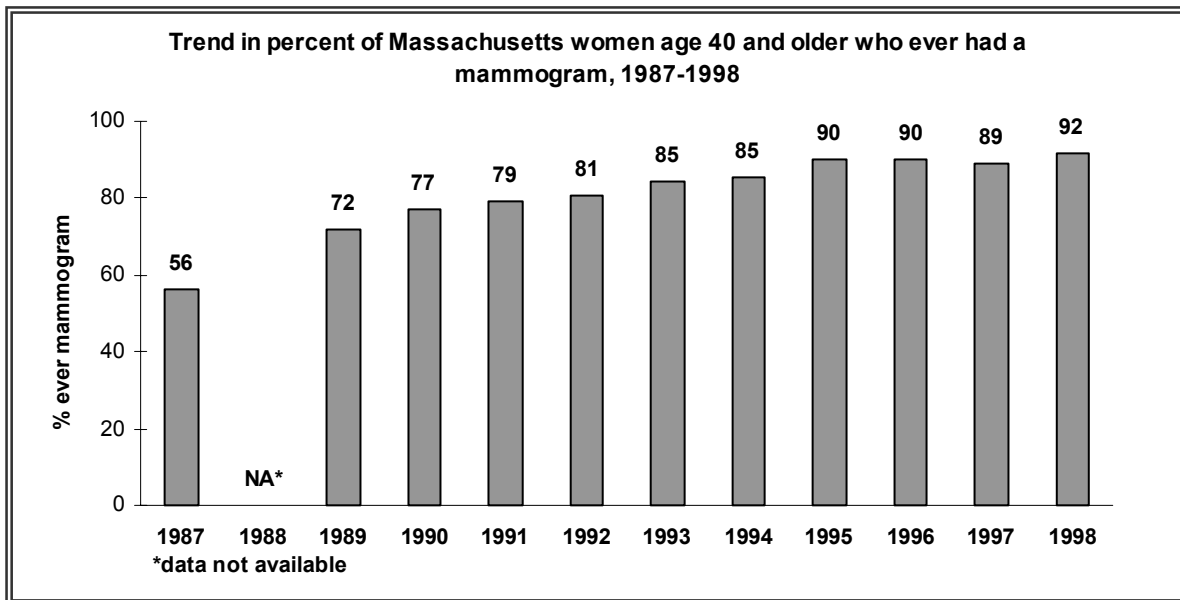


Figure 12b

Source: Massachusetts BRFSS, 1987-1998

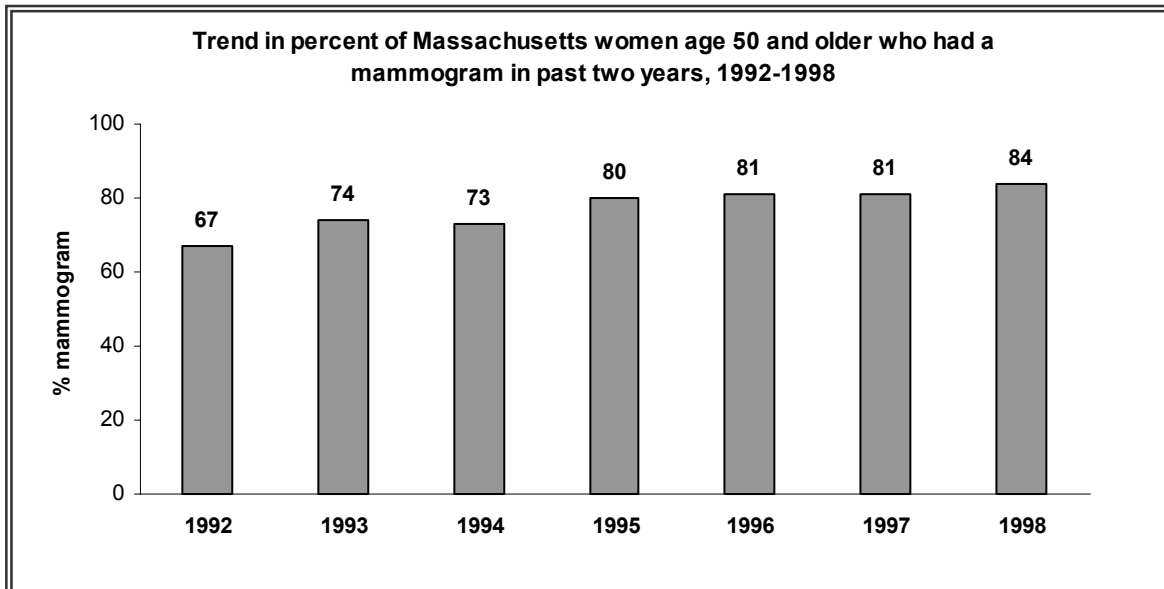


Figure 12c

Source: Massachusetts BRFSS, 1992-1998

- Comparison with National Data and Healthy People 2000 Objectives:**

Compared to other states in 1998, Massachusetts had the 2nd highest percent of women age 40 and older who ever had a mammogram, and the 2nd highest percent of women age 50 and older who had a mammogram within 2 years.

BREAST CANCER SCREENING		
	MAMMOGRAM EVER, AGE 40+	MAMMOGRAM IN 2 YRS, AGE 50+
<i>Massachusetts %</i>	91.6 %	83.8 %
<i>US Median %</i>	84.7 %	75.2 %
<i>Range of US States</i>	72.5 - 91.7 %	56.8 - 89.4 %
<i>Massachusetts rank</i>	2 nd	2 nd
<i>Healthy People 2000</i>	NA	NA

Table 12b

Source: US and MA BRFSS, 1998

Box 12. RESEARCH BRIEFS ON BREAST CANCER SCREENING

Appropriate Breast Cancer Screening

The American Cancer Society guidelines for appropriate breast cancer screening among women are age-specific, and recommend the following time frame for mammography and clinical breast exam: for women age 20-39, clinical breast exam every 3 years, and for women age 40 and older yearly mammogram and yearly clinical breast exam.

In 1998, 71% of all women received appropriate breast cancer screening for their age group. 85% of women age 20-39 received a clinical breast exam within the past 3 years, i.e. appropriate screening for this age group. Appropriate screening varied by age for women 40 and above (Figure 12d). Women age 40-49 and age 70 and older were less likely to receive appropriate screening, compared to women 50-69. Women 40-49 were less likely to have had a mammogram in the past year compared to older women while, women age 70 and above were less likely to have had a clinical breast exam in the past year compared to younger women.

Women with greater income (Figure 12e) and adequate health insurance (Figure 12f) were more likely to get appropriate screening than women with lower incomes or inadequate insurance. Even adjusting for differences in age, these socioeconomic indicators remained strong predictors of getting appropriate screening. After adjusting for differences in age, there were no differences in appropriate breast screening by race/ethnicity.

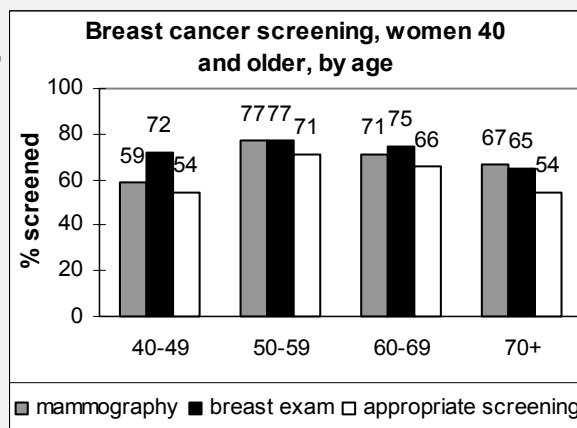


Figure 12d

Source: MA BRFSS, 1998

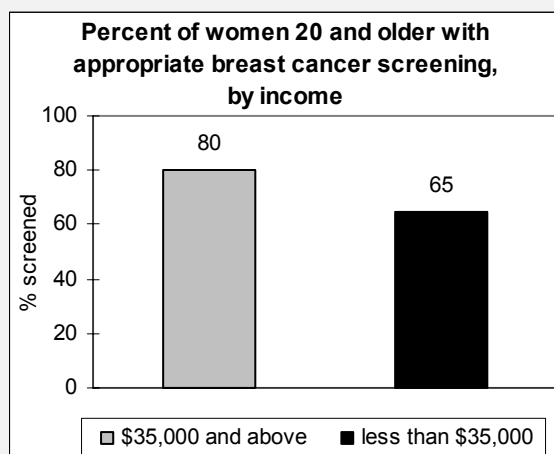


Figure 12e

Source: MA BRFSS, 1998

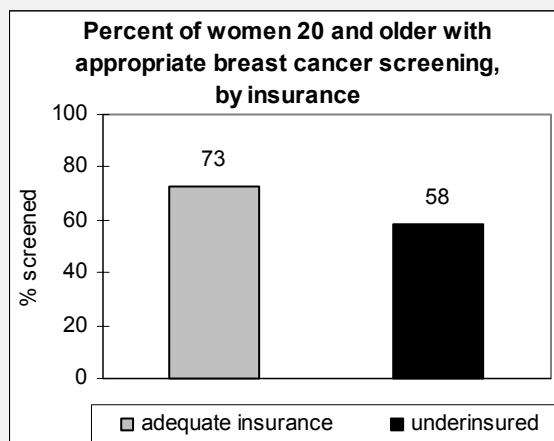


Figure 12f

Source: MA BRFSS, 1998

SECTION 13. CERVICAL CANCER SCREENING

All female respondents were asked about frequency of cervical cancer screening. In this analysis, we looked at the percent of all women who ever had a Pap smear and, among women without a hysterectomy, the percent who had a Pap smear in the past 3 years.

In 1998, 94% of women 18 and older ever had a Pap smear. Women age 18-24, Asian women, and those with the lowest income were much less likely to have ever been screened. Over 88% of women without a hysterectomy received a Pap within the previous 3 years. The relationships between demographic characteristics and having a Pap smear within 3 years were similar to those who have ever had a Pap smear.

CERVICAL CANCER SCREENING AMONG MASSACHUSETTS WOMEN, 1998				
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>				
	PAP SMEAR EVER		PAP SMEAR IN PAST 3 YEARS *	
	%	95% CI	%	95% CI
OVERALL	93.5	91.8 - 95.3	88.3	86.1 - 90.5
AGE GROUP				
18-24	77.2	66.1 - 88.3	77.0	65.7 - 88.4
25-34	96.5	94.6 - 98.4	94.3	91.9 - 96.7
35-44	98.6	97.6 - 99.6	94.5	92.5 - 96.6
45-54	98.9	97.9 - 99.9	92.5	89.3 - 95.7
55-64	97.9	95.6 - 100	89.9	84.6 - 95.3
65-74	92.8	89.4 - 96.1	81.1	74.0 - 88.3
75 AND OLDER	85.4	79.9 - 90.9	64.9	54.7 - 75.2
RACE/ETHNICITY				
WHITE	94.5	92.9 - 96.0	89.0	86.9 - 91.1
BLACK	96.3	92.6 - 100	90.7	82.4 - 98.9
HISPANIC	85.1	74.4 - 95.7	84.0	72.2 - 95.8
ASIAN	65.4	36.1 - 94.8	64.5	34.7 - 94.3
OTHER	94.2	83.9 - 100	86.1	71.2 - 100
EDUCATION				
< HIGH SCHOOL	90.8	86.9 - 94.7	79.7	71.6 - 87.8
HIGH SCHOOL	92.6	90.2 - 94.9	87.5	84.5 - 90.5
COLLEGE 1-3 YRS	92.1	87.0 - 97.2	84.6	78.7 - 90.5
COLLEGE 4+ YRS	96.6	95.1 - 98.1	93.9	91.9 - 95.9
HOUSEHOLD INCOME				
<\$25,000	89.0	84.2 - 93.8	78.8	72.6 - 85.0
\$25-34,999	95.4	92.4 - 98.4	90.6	86.7 - 94.5
\$35-49,999	97.4	95.7 - 99.1	93.5	90.7 - 96.3
\$50,000-74,999	99.6	99.2 - 100	95.7	93.1 - 98.2
\$75,000+	95.8	92.5 - 99.2	93.4	89.5 - 97.2
EMPLOYMENT				
EMPLOYED	95.5	93.4 - 97.6	91.4	88.9 - 93.9
OUT OF WORK	94.7	88.8 - 99.6	90.4	84.4 - 96.4
UNABLE TO WORK	96.7	93.1 - 100	94.9	89.9 - 99.9
HOMEMAKER	97.6	95.6 - 99.7	93.4	89.8 - 97.1
STUDENT	71.0	50.7 - 91.2	69.1	48.2 - 89.9
RETIRED	89.3	86.1 - 92.6	74.1	67.8 - 80.6

Table 13a

Source: Massachusetts BRFSS, 1998

* among women without hysterectomy

- **Trends over time:**

The percent of women 18 and older who ever had a Pap smear has not changed since 1991. Among women without a hysterectomy, there has been no change in the percent screened within 3 years since 1992.

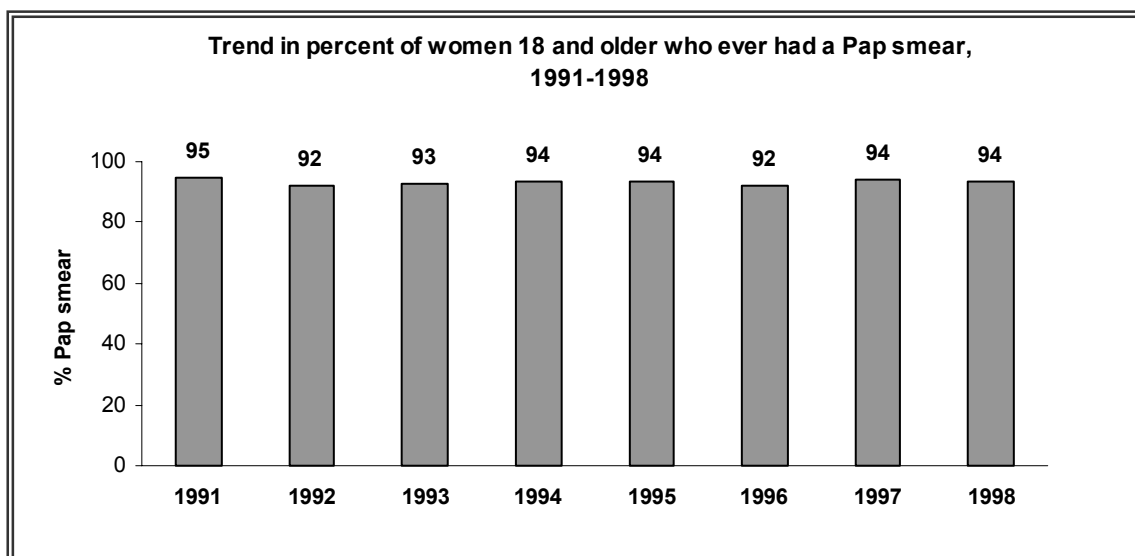


Figure 13a

Source: Massachusetts BRFSS, 1991-1998

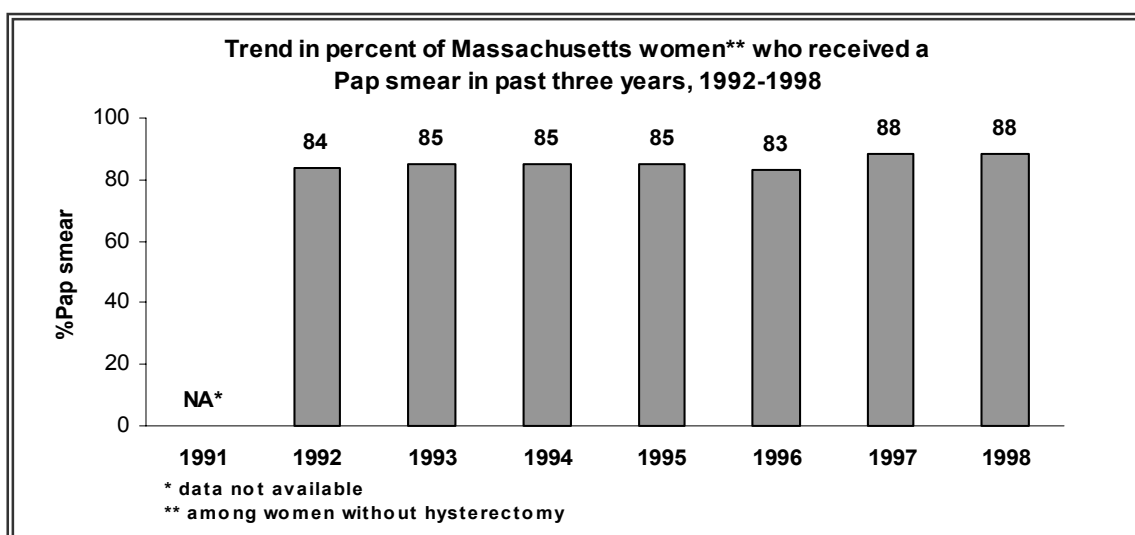


Figure 13b

Source: Massachusetts BRFSS, 1992-1998

- **Comparison with National Data and Healthy People 2000 Objectives:**

Compared to other states, Massachusetts had the 37th highest percent of women who ever had a Pap smear, and the 4th highest percent who had a Pap smear in the past 3 years.¹ Massachusetts did not meet the Healthy People 2000 Objectives for the percent of women who ever had a Pap smear.

	WOMEN'S HEALTH	
	PAP SMEAR EVER	PAP SMEAR IN 3 YRS ¹
Massachusetts %	93.5 %	88.3 %
US Median %	94.6 %	84.9 %
Range of US States	83.2 – 97.0 %	67.6 - 93.9 %
Massachusetts rank	37 th	4 th
Healthy People 2000	95%	N/A

Table 13b

Source: US and MA BRFSS, 1998, HP 2000 Objectives

¹ among women without hysterectomy

BOX 13. RESEARCH BRIEFS ON CERVICAL CANCER SCREENING

Cervical Cancer and Breast Cancer Screening Among Asian Women

Using BRFSS data combined for 1995-1998, we assessed cervical and breast cancer screening among white, black, Hispanic, and Asian women across different age groups. While 89% of white, black, and Hispanic women age 18-39 ever had a clinical breast exam (CBE), only 61% of Asian women in this age group reported ever having a CBE (Figure 13c). However, among women age 40 and older there were no notable differences across race/ethnicity. The relationship between having a clinical breast exam within the past two years and race within age groups was similar.

Only 45% of Asian women age 18 to 39 ever had a Pap smear exam, compared to 93% of white, black and Hispanic women (Figure 13d). There were, however, no differences by race in cervical cancer screening among women 40 and older. We noted the same relationship between Pap smears within the past three years and race within age groups.

Given the large differences between young Asian women and women from other races, we evaluated whether these differences remained when we limited the analysis to women who had received a recent checkup. Recent medical checkup is often used as a proxy to assess use of preventive services. Even among women age 18 to 39 who had a routine medical checkup in the last year, the proportion of Asian women who reported ever having a CBE or a Pap smear was much lower than women of other races.

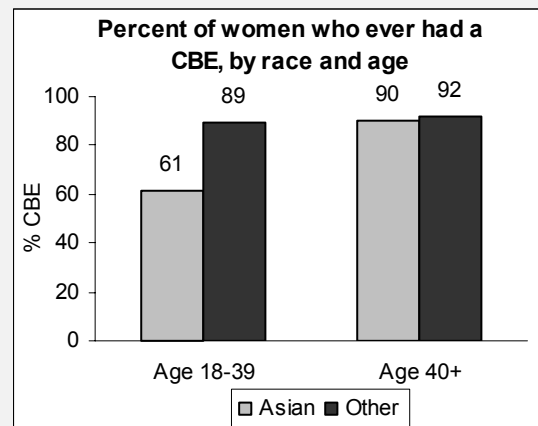


Figure 13c Source: MA BRFSS 1995-1998

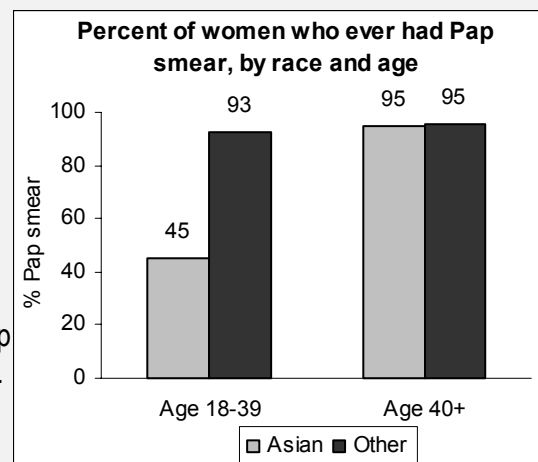


Figure 13d Source: MA BRFSS 1995-1998

SECTION 14. FAMILY PLANNING

All female respondents age 18 to 44 who had not had a hysterectomy and were not currently pregnant were asked about their current use of birth control. We limited the analysis of use of birth control to those women who were currently sexually active. Women who were pregnant currently or within 5 years were asked if they wanted to be pregnant sooner, later, then, or not at all. Among women pregnant in the past 5 years, we estimated the percent of unplanned pregnancies as those who wanted to be pregnant later or not at all.

In 1998, 69% of sexually active women reported using some form of birth control. Younger women, and women who were never married were more likely to use birth control. In 1998, 33% of women age 18 to 44 said that they were currently or had been pregnant in the previous five years. Among these women, 31% said that they had not wanted to be pregnant until later or not at all. Unplanned pregnancies were strongly related to age, with younger women much more likely to have had an unplanned pregnancy. Black women, women who were never married, and women with lower levels of income were more likely to have described their pregnancy as unplanned.

FAMILY PLANNING AMONG MASSACHUSETTS WOMEN AGE 18-44, 1998				
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>				
	USE OF BIRTH CONTROL		UNPLANNED PREGNANCY AMONG WOMEN PREGNANT IN PAST 5 YEARS	
	%	95% CI	%	95% CI
OVERALL	72.3	68.7-75.9	30.9	24.7 - 37.1
AGE GROUP				
18-24	77.9	69.6-86.1	67.7	52.0 - 83.3
25-34	74.2	68.6-79.7	26.8	18.5 - 35.1
35-44	68.1	62.4-73.7	19.3	10.0 - 28.6
RACE/ETHNICITY				
WHITE	72.1	68.1-76.0	30.0	23.0 - 37.0
BLACK	71.9	56.5-87.2	70.3	50.3 - 90.4
HISPANIC	71.0	57.8-84.3	25.5	10.5 - 40.5
ASIAN	†		†	
OTHER	†		†	
EDUCATION				
< HIGH SCHOOL	71.5	56.3-86.8	31.2	11.3 - 51.2
HIGH SCHOOL	67.2	59.7-74.7	44.6	32.8 - 56.4
COLLEGE 1-3 YRS	76.1	70.2-82.0	30.1	19.0 - 41.1
COLLEGE 4+ YRS	73.2	67.5-78.9	22.3	11.8 - 32.8
HOUSEHOLD INCOME				
<\$25,000	74.5	66.5-82.5	51.1	37.5 - 64.6
\$25-34,999	74.6	64.3-84.8	38.5	21.8 - 55.2
\$35-49,999	66.9	57.4-76.4	18.6	7.8 - 29.3
\$50,000-74,999	74.8	66.9-82.6	16.1	5.9 - 26.2
\$75,000+	77.4	69.9-84.9	17.7	4.8 - 30.7
EMPLOYMENT				
EMPLOYED	71.8	67.6-75.9	31.4	23.6 - 39.1
OUT OF WORK	66.7	51.9-81.5	43.6	23.4 - 63.8
UNABLE TO WORK	†		†	
HOMEMAKER	76.3	66.5-86.1	23.9	11.1 - 36.6
STUDENT	77.1	63.5-90.8	48.0	16.8 - 79.1
RETIRED	†		†	
MARITAL STATUS				
MARRIED/LIVING AS COUPLE	71.6	67.2-75.9	18.4	12.9-24.0
DIVORCED/SEPARATED	69.7	57.7-81.7	33.6	13.6-53.6
NEVER MARRIED	74.8	67.4-82.1	78.1	66.3-89.7

Table 14a

Source: Massachusetts BRFSS, 1998

† Insufficient sample size

- **Trends over time:**
data not available
- **Comparison with National Data and Healthy People 2000 Objectives:**
data not available

BOX 14. RESEARCH BRIEFS ON FAMILY PLANNING

Use of Birth Control

In 1998, women who reported using birth control were also asked which method of birth control they used. Overall, 69% of women who were sexually active, were not currently pregnant, and did not have a hysterectomy, used some form of birth control. The most common form of birth control was oral contraceptive pills, followed by condoms, tubal ligation, and vasectomy (Figure 14a). Method of birth control varied according to age. While the pill was the most frequently used form of birth control among women 18 to 34, vasectomy, having tubes tied and the pill were equally used among women over 35.

Method of birth control used, among women age 18-44 currently using birth control

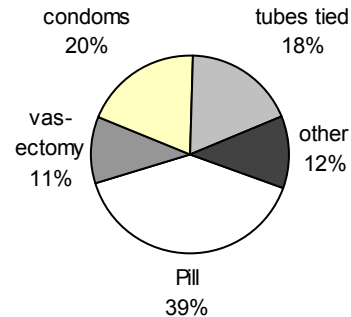


Figure 14a

Source: MA BRFSS, 1998

Unplanned Pregnancy

Unplanned pregnancy may be related to adverse health outcomes for both mothers and infants. We examined the prevalence of selected maternal characteristics with unplanned pregnancy. (Figure 14b). Women who considered themselves at high or medium risk of HIV were more likely to have had an unplanned pregnancy in the previous five years, compared to women who considered themselves at low or no risk of contracting HIV. Women who reported intimate partner abuse¹ within the year were more likely to have had an unplanned pregnancy than women who did not report abuse. Women with inadequate health insurance were more likely than women with adequate insurance to report an unplanned pregnancy.

Percent of women with unplanned pregnancy, by maternal characteristics

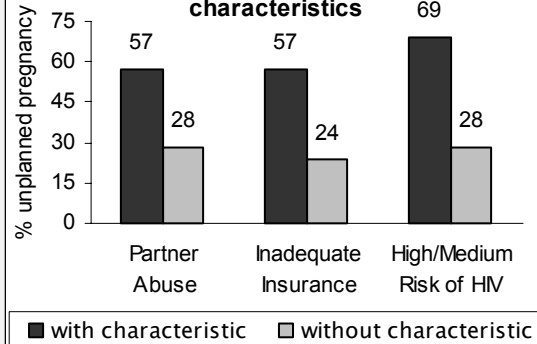
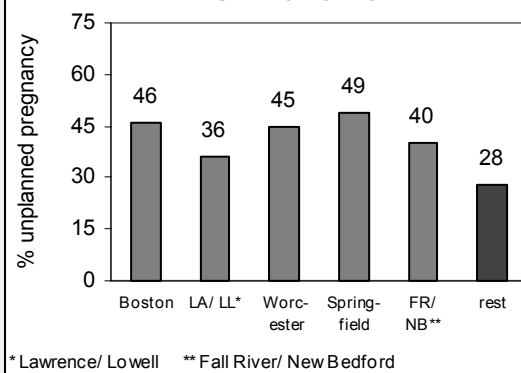


Figure 14b

Source: MA BRFSS, 1998

Figure 14c shows the percent of women who had an unplanned pregnancy in several Metropolitan areas in Massachusetts and the rest of the state. Overall, in these five metropolitan areas, 43% of pregnancies in the past five years were unplanned, compared to 28% unplanned pregnancies in the rest of the state.

Percent of women with unplanned pregnancy, by city



* Lawrence/ Lowell ** Fall River/ New Bedford

Figure 14c

Source: MA BRFSS, 1998

¹ Intimate partner abuse is defined as experiencing fear, control, or physical violence by a spouse, live-in partner or date within the year. Also see Section 16: Violence

SECTION 15. HIV/AIDS

In 1998, respondents age 18 to 64 were asked to assess their risk of contracting HIV, the virus that causes AIDS. All adults age 18 to 64 were also asked if they had ever been tested for HIV, and if they had been tested in the past year.

In 1998, 7% of adults age 18 to 64 characterized their risk of contracting HIV as medium to high. Adults 18 to 24, and Blacks and Hispanics were more likely to describe their risk as medium to high. The proportion of adults who reported higher risk decreased more strongly with income than education. Over 42% of adults had ever been tested for HIV. A higher percent of males, adults 25 to 44, and blacks and Hispanics had ever been tested. Almost 15% of adults 18 to 64 had an HIV test in the previous year. Females and males were equally likely to have been tested during this time. The percent of adults tested in the past year decreased with increasing age, increasing household income, and increasing education. Blacks and Hispanics were more likely to have had a recent test.

HIV/AIDS AMONG MASSACHUSETTS ADULTS AGE 18-64, 1998						
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>						
	HIGH/MEDIUM RISK OF INFECTION		EVER TESTED FOR HIV		TESTED FOR HIV IN PAST YEAR	
	%	95% CI	%	95% CI	%	95% CI
OVERALL	7.2	6.0 - 8.4	42.1	39.8 - 44.3	14.6	13.0 - 16.2
GENDER						
MALE	8.4	6.6 - 10.2	44.8	41.5 - 48.2	14.7	12.2 - 17.1
FEMALE	6.0	4.4 - 7.6	39.4	36.4 - 42.4	14.6	12.3 - 16.8
AGE GROUP						
18-24	12.7	8.2 - 17.1	35.8	29.1 - 42.4	19.2	13.7 - 24.6
25-34	6.9	4.8 - 9.0	57.1	53.0 - 61.3	21.0	17.4 - 24.5
35-44	5.7	4.0 - 7.4	46.0	41.9 - 50.1	13.4	10.8 - 16.0
45-54	5.7	2.8 - 8.6	31.4	26.2 - 36.7	8.1	4.8 - 11.3
55-64	6.4	3.4 - 9.3	24.2	19.1 - 29.3	6.3	3.4 - 9.3
RACE/ETHNICITY						
WHITE	6.2	5.0 - 7.4	41.2	38.8 - 43.7	13.2	11.5 - 14.9
BLACK	13.8	5.3 - 22.4	57.8	47.8 - 67.7	29.4	19.4 - 39.4
HISPANIC	15.6	8.7 - 22.5	47.4	37.9 - 56.9	24.4	16.2 - 32.6
ASIAN	10.3	0.8 - 19.9	33.3	18.8 - 47.9	13.8	3.2 - 24.4
OTHER	17.6	1.3 - 33.2	39.1	21.7 - 56.5	17.3	3.8 - 30.9
EDUCATION						
< HIGH SCHOOL	8.9	4.5 - 13.3	36.5	28.4 - 44.7	17.2	10.8 - 23.6
HIGH SCHOOL	7.9	5.7 - 10.0	41.5	37.3 - 45.7	17.5	14.0 - 21.0
COLLEGE 1-3 YRS	7.8	5.2 - 10.4	41.3	36.9 - 45.8	13.9	10.7 - 17.0
COLLEGE 4+ YRS	6.0	4.2 - 7.7	44.1	40.5 - 47.7	12.5	10.2 - 14.8
HOUSEHOLD INCOME						
<\$25,000	11.2	7.6 - 14.8	44.7	39.2 - 50.3	19.3	15.0 - 23.6
\$25-34,999	9.7	4.9 - 14.4	40.2	33.5 - 47.0	14.2	8.4 - 20.0
\$35-49,999	7.0	4.5 - 9.4	42.0	36.7 - 47.3	14.7	10.9 - 18.5
\$50,000-74,999	5.3	3.4 - 7.2	42.5	37.1 - 47.8	14.3	10.1 - 18.4
\$75,000+	4.3	2.5 - 6.0	47.2	42.0 - 52.4	13.6	10.2 - 16.9
EMPLOYMENT						
EMPLOYED	7.2	5.8 - 8.5	42.7	40.2 - 45.3	14.4	12.6 - 16.3
OUT OF WORK	8.7	3.0 - 14.4	47.8	37.8 - 57.8	15.6	8.4 - 22.8
UNABLE TO WORK	10.0	2.1 - 17.8	55.5	43.4 - 67.6	25.8	12.7 - 38.8
HOMEMAKER	4.2	0.4 - 8.0	43.7	34.5 - 52.9	22.2	14.3 - 30.0
STUDENT	11.2	3.6 - 18.8	30.9	21.1 - 40.7	10.2	5.0 - 15.3
RETIRED	2.9	0 - 6.3	22.0	12.6 - 31.4	3.7	0.5 - 6.9

Table 15a

Source: Massachusetts BRFS, 1998

- **Trends over time:**

The percent of adults age 18 to 64 who had ever been tested for HIV has increased significantly since 1993. In addition, the percent of adults in this age group who were tested in the past year has increased during this time.

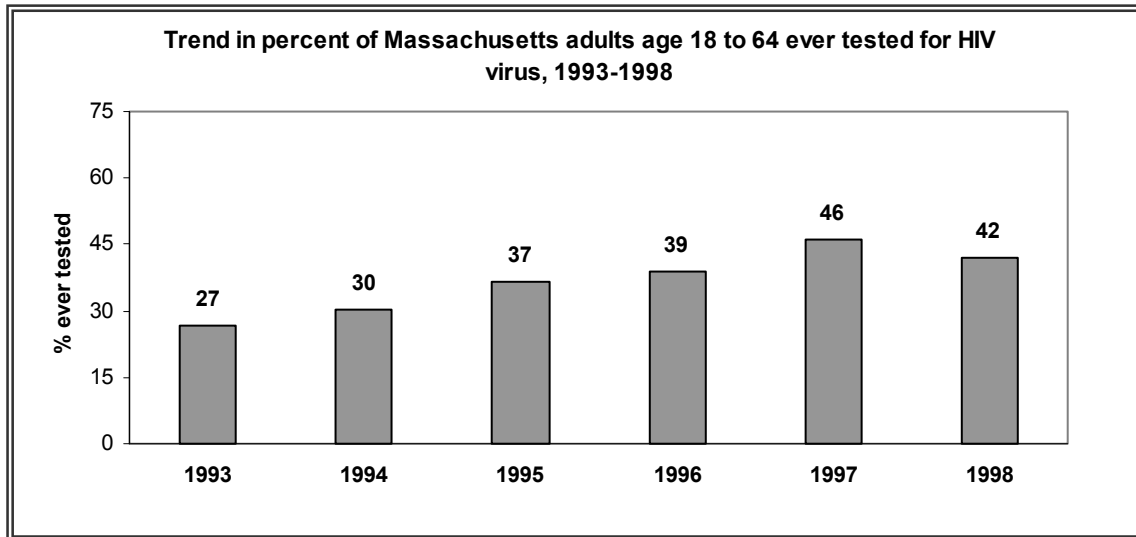


Figure 15a

Source: Massachusetts BRFSS, 1993-1998

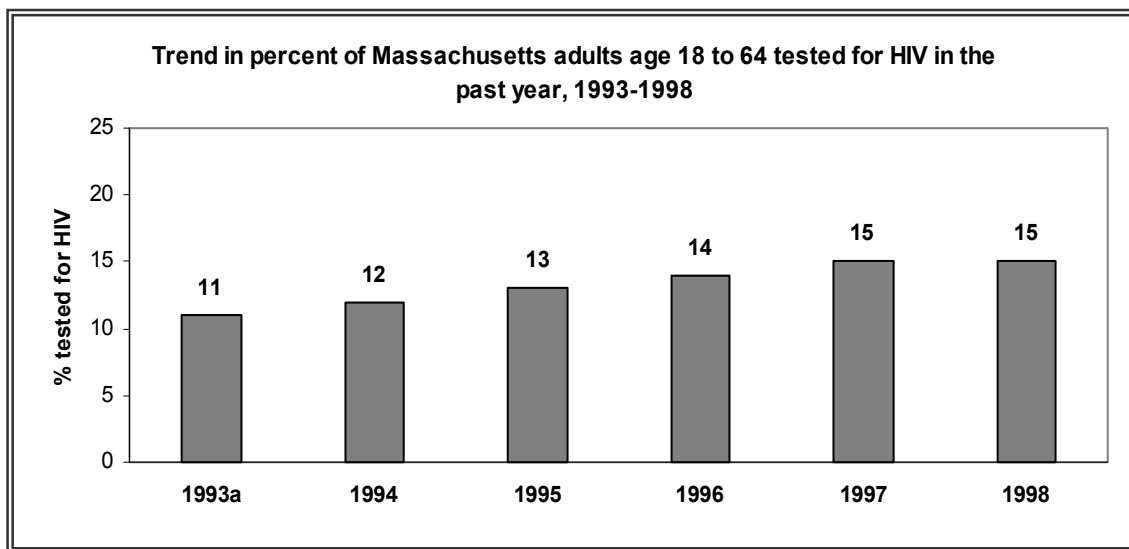


Figure 15b

Source: Massachusetts BRFSS, 1993-1998

- **Comparison with National Data and Healthy People 2000 Objectives:**

Compared to other states in 1998, Massachusetts had the 40th highest percent of adults age 18-64 who described their risk of contracting HIV as medium to high.

HIV/AIDS	
	MEDIUM/HIGH RISK
Massachusetts %	7.2 %
US Median %	6.2 %
Range of US States	1.9 - 11.4 %
Massachusetts rank	40 th
Healthy People 2000	N/A

Table 15b

Source: US and MA BRFSS, 1998

Box 15. RESEARCH BRIEFS ON HIV AND AIDS

HIV risk and testing for HIV within the last year

In 1998, 27% of those who reported their risk of HIV as medium to high were tested for HIV in the last year while 14% of those who reported no risk or low risk were tested within the last year. From 1993 to 1998, there has been an increase in the percent of adults with high or medium risk who were tested within the last year and little change in the percent of adults with low or no risk tested within the last year (Figure 15c).

Reason for HIV test among women age 18-44

In 1998, a total of 16% of women age 18-44 were tested for HIV in the previous 12 months. The percent of women in this age group tested in the past year has increased since 1994. In particular, there have been substantial increases in the percent of all women age 18-44 who received an HIV test for reasons related to pregnancy (Figure 15d). In 1998, among women who had been tested in the previous year, 44% cited their main reason for being tested as related to pregnancy, 19% were tested for reasons related to legal or insurance issues, and 38% got tested to find out if they were infected.

In July 1995, the US Public Health Service recommended that health care providers counsel all pregnant women about HIV prevention and encourage testing for HIV infection. Before this recommendation, the percent of currently pregnant women who were tested for HIV during the previous 12 months for any reason was 33%* (1994-1995), while after the recommendation the percent of pregnant women who received HIV testing in the past year increased to 44%* in 1996-1998 (Figure 15e).

*estimates were adjusted for age (see glossary)

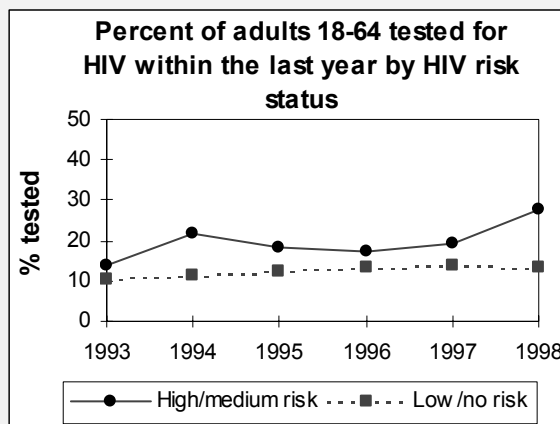


Figure 15c

Source: MA BRFSS, 1993-1998

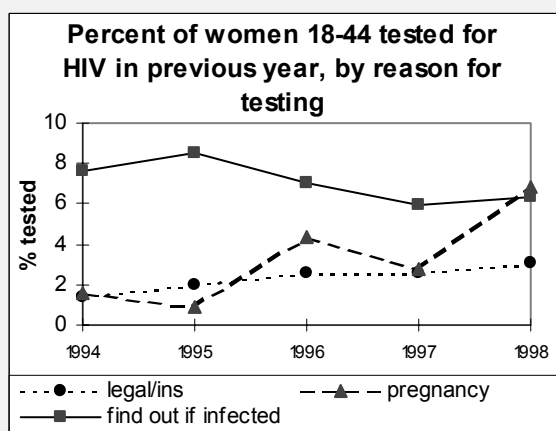


Figure 15d

Source: MA BRFSS, 1994-1998

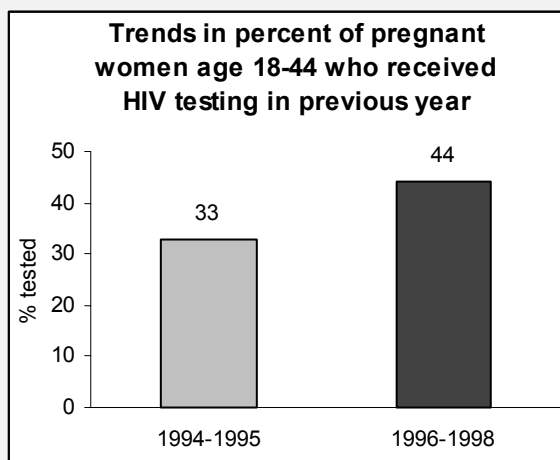


Figure 15e

Source: MA BRFSS, 1994-1998

SECTION 16. VIOLENCE

All respondents were asked about physical violence in the past year by a stranger or someone they knew, and if they felt fear or control by an intimate partner. Intimate partner abuse was defined as experiencing physical violence, fear, or control by a spouse, a live-in partner, or a date. Analyses on intimate partner abuse were limited to women 18-59.

In 1998, almost 5% of adults reported that they were physically hurt in the previous 12 months. Males and adults 18-24 were more likely to have been hurt in the previous year. College graduates were less likely to report experiencing violence in the past year. 6% of women 18 to 59 experienced intimate partner abuse in the previous year. There was an inverse relationship between age and incidence of abuse. A smaller percent of Asian women reported abuse by a partner compared to other races.

VIOLENCE AMONG MASSACHUSETTS ADULTS, 1998				
<i>(PERCENTAGES AND 95% CONFIDENCE INTERVAL LIMITS)</i>				
	PHYSICALLY HURT IN PAST YEAR, ALL AGES		INTIMATE PARTNER ABUSE IN PAST YEAR, WOMEN AGE 18-59	
	%	95% CI	%	95% CI
OVERALL	4.9	3.7 - 6.0	6.0	4.4 - 7.6
GENDER				
MALE	6.1	4.4 - 7.8	--	--
FEMALE	3.7	2.1 - 5.3	--	--
AGE GROUP				
18-24	17.3	10.6 - 23.9	14.3	7.2 - 21.5
25-34	5.3	3.0 - 7.5	7.1	3.7 - 10.5
35-44	3.0	1.4 - 4.5	4.6	2.1 - 7.0
45-59	3.7	2.3, 5.2	2.7	1.2, 4.2
60 AND OLDER	0.3	0.0, 0.8	--	--
RACE/ETHNICITY				
WHITE	4.8	3.5 - 6.0	6.1	4.3 - 7.9
BLACK	1.4	0 - 3.5	4.9	0 - 10.3
HISPANIC	8.6	2.2 - 14.9	7.1	1.8 - 12.3
ASIAN	9.8	0 - 22.2	0.3	0 - 0.9
OTHER	5.9	0.4 - 11.5	†	
EDUCATION				
< HIGH SCHOOL	6.5	1.9 - 11.0	6.8	2.4 - 11.3
HIGH SCHOOL	5.1	3.1 - 7.2	5.3	2.7 - 8.0
COLLEGE 1-3 YRS	6.9	4.0 - 9.9	8.9	5.3 - 12.5
COLLEGE 4+ YRS	2.7	1.4 - 3.9	3.9	1.4 - 6.5
INCOME				
<\$25,000	5.3	3.3 - 7.3	9.2	5.1 - 13.2
\$25-34,999	3.9	1.5 - 6.3	5.9	1.8 - 10.0
\$35-49,999	5.2	2.1 - 8.4	5.8	2.1 - 9.5
\$50,000-74,999	3.3	1.4 - 5.1	4.4	1.6 - 7.2
\$75,000+	4.4	2.2 - 6.6	4.7	0.9 - 8.4
EMPLOYMENT				
EMPLOYED	5.7	4.1 - 7.3	5.5	3.7 - 7.3
OUT OF WORK	4.7	0.3 - 9.1	7.0	1.3 - 12.6
UNABLE TO WORK	8.5	1.0 - 15.9	9.3	0 - 21.9
HOMEMAKER	0.2	0 - 0.4	3.3	0.1 - 6.6
STUDENT	13.8	5.4 - 22.3	22.5	7.8 - 37.1
RETIRED	0.3	0 - 0.8	†	

Table 16a

Source: Massachusetts BRFSS, 1998

† insufficient sample size

- **Trends over time:**
data not available
- **Comparison with National Data and Healthy People 2000 Objectives:**
data not available

Box 16. RESEARCH BRIEFS ON VIOLENCE

Consequences of Intimate Partner Abuse

Women who experienced intimate partner abuse (IPA) in the previous year were asked whether they experienced the following consequences in relation to this abuse: were unemployed or missed time at work, missed school, moved out of the house, (even temporarily), and had contact with the police. In this analysis, we assessed the proportion of women 18-59 who experienced these consequences. The results presented in Table 16b are not mutually exclusive, so that women could have experienced more than one consequence. The most common consequence among women who experienced IPA was contact with the police. Overall, more than 43% of women suffered at least one consequence as a result of their intimate partner abuse.

Use of Services

Among women who had been abused by an intimate partner, we also assessed their use of services related to the abuse. Over 47% of women who experienced intimate partner abuse in the previous year sought a divorce, separation, or breakup as a result of this abuse (Table 16c). Among women who had children in the house, 84% sought help for their children. Almost 61% of women who experienced intimate partner abuse in the previous year reported using at least one of the listed services.

Intimate Partner Abuse and Health

Among women age 18-59, we assessed whether those who had been hurt by an intimate partner also experienced poorer health compared to women who had not experienced abuse in the previous year. Women who had IPA were much more likely to report several indicators of poor mental health (Figure 16a). After adjusting for differences in age and race, women who had experienced IPA were 3.2 times more likely to have felt depressed for more than half of the previous month, and 1.8 times more likely to have experienced poor sleep for more than half the month. In addition, women with IPA experienced poorer physical, and were more likely to currently smoke and more likely to be limited or have a disability.

Consequences related to Intimate Partner Abuse	%
Unemployed or missed time at work	13.1
Missed school	4.7
Moved out of house, even temporarily	24.6
Had contact with police	30.3

Table 16b

Source: MA BRFSS, 1998

Use of Services related to Intimate Partner Abuse	%
Sought medical help	15.8
Sought counseling or therapy	36.4
Used domestic violence hotline	24.6
Sought help for children ¹	83.6
Got a restraining order	20.4
Sought breakup, separation, divorce	47.7

¹ Among women who have children

Table 16c

Source: MA BRFSS, 1998

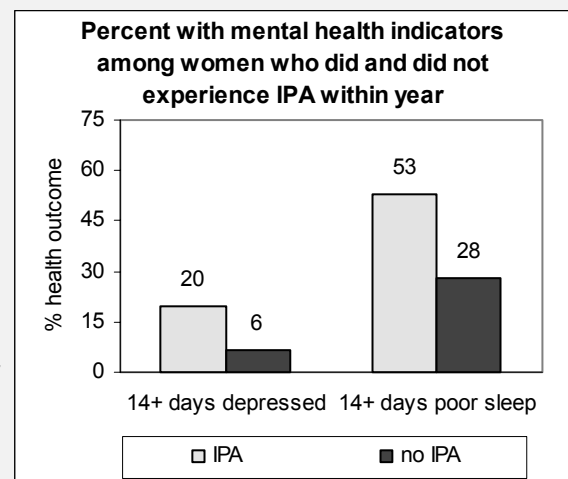


Figure 16a

Source: MA BRFSS, 1998

APPENDIX

GLOSSARY

Confidence Interval: The BRFSS surveys a random sample of the Massachusetts adult population and generalizes the results to estimate the true prevalence of disease or behaviors of the entire population. Two successive surveys of the same population may not yield the same observed proportion of smokers, for example, simply due to the random selection process, even though the true underlying proportion of adults who smoke was unchanged.

The percent estimate usually provides a good approximation of the underlying truth, although there are a range of values that may be consistent with the data. This range is called a confidence interval. A 95% confidence interval can be considered to be a range of values that has a 95% chance of including the true proportion, given that the data were not biased in any way. The confidence interval describes the precision of an observed estimate of the underlying proportion, with a wider interval indicating less certainty about this estimate. The main factor affecting the width of the CI is the number of respondents.

A 95% confidence interval can be considered a range of values that has a 95% chance of including the true proportion.

Readers should note that not all values within the confidence interval are equally likely. Values close to the estimate are more likely than values near the end points of the confidence interval. For example, the estimate for the percent of adults in Massachusetts who are current smokers is 21.1%. The 95% confidence interval for this estimate is 19.5-22.7%. However, upon repeated surveys, half of the values would be expected to fall within the range 20.5-21.7%.

Healthy People 2000 Objectives: *The Healthy People 2000: National Health Promotion and Disease Prevention Objectives* is a national agenda that aims to significantly improve the health of Americans in the decade preceding the year 2000. (Healthy People 2010 Objectives for the coming decade have recently been released.)

Healthy People 2000 seeks to: increase the span of healthy life, to reduce health disparities, to achieve access to preventive services for all.

Developed through an extensive governmental, professional, and public national process, Healthy People 2000 defined three broad national goals: to increase the span of healthy life; to reduce health disparities; and to achieve access to preventive services for all. These goals were supported by 300 specific objectives that set priorities for public health during the 1990's. The objectives were organized into 22 priority areas such as physical activity and fitness, nutrition, and tobacco. For each objective, a numeric national target for the year 2000 was set. For each health status indicator in this report which has a corresponding Healthy People 2000 Objective, the year 2000 target is shown in the relevant graphs and tables.

Median: The median is the middle observation for a set of observations; i.e. the value that divides the frequency distribution into halves. It is also equal to the 50th percentile. For example, the US median represents the point at which half of the states have a higher estimate than the median and half have a lower estimate.

Person-time: Consider a population at risk for having an outcome and a period of time over which we want to follow these individuals to measure the incidence of this outcome in the population. Every person in the population experiences a certain amount of time at risk for having the outcome. The sum of this time over the

individuals is the *person-time* at risk. Person-time goes into the denominator when calculating the incidence rate of disease.

In this report, we estimate incidence rate of fractures of the hip, wrist or backbone since age 45. The person-time for each person in this population depends on the amount of time spent at risk for having a fracture between the age of 45 and the current age. One person who is currently age 60, and never had a fracture, would contribute $60 - 45 = 15$ years \times 1 person = 15 person-years. Another person who is currently age 60, but had a fracture at age 55, would contribute $55 - 45 = 10$ years \times 1 person = 10 person-years. Once a person has the outcome, they come out of the risk set of people. The incidence rate is calculated as the total number of events divided by the total person-time for the population.

Person-time is the sum of time spent by individuals in a population at risk for an outcome.

Standardization (adjustment): Standardization is one tool used to remove the influence of an extraneous variable on the association between an exposure and outcome, that is to remove the *confounding* by that extraneous variable. For example, we may be interested in assessing whether women who experienced recent intimate partner abuse (exposure) are more likely to be currently smoking (outcome). However, we know that in our population women who experienced recent intimate partner abuse (IPA) are younger than those who have not, and younger women are also more likely to smoke. Thus, we would like to remove the confounding effect of age, and to understand the underlying association between IPA and smoking independent of age.

In standardization, we stratify the data by the confounder, and calculate the proportion of people with the outcome within each stratified group, and we do this separately for the exposed and the unexposed group. In the above example, we would stratify the data and calculate the proportion of smokers within each level of age, for the IPA and non-IPA group separately. Next, we would select a standard set of weights based on the frequency distribution of the confounder for that population. For example, we could calculate the frequency distribution of age for the total population. Then we apply this standard set of weights to the stratified-specific proportions for both the exposed and the unexposed group, and then compute the weighted average proportion for the exposed and unexposed groups. In essence, standardization breaks the link between the confounder and exposure, and allows us to say that if the exposed group and unexposed group had the level of the confounder, what would the association with the outcome be. In the above example, this translates into what is the effect of IPA on smoking, if people with and without IPA had the same age distribution.

Standardization is one tool used to remove the influence of an extraneous variable on the association between an exposure and outcome, that is to eliminate confounding by an extraneous variable

In the above example, we standardized by age. However, standardization can be used to remove confounding by any extraneous variable such as gender, race, income, health status, etc. Standardization is one of the most intuitive approaches to removing confounding from data. Other commonly used tools include regression modeling and Mantel-Haenzel techniques.

KEY LINKS

Chronic Disease Surveillance Program: The Chronic Disease Surveillance Program is part of the Bureau of Health Statistics, Research and Evaluation at the Massachusetts Department of Public Health. Additional information about the program including other state publications can be found on our website located at www.state.ma.us/dph/hstat.htm, link to our program.

MassCHIP: Data on selected variables from the Massachusetts BRFSS are available through the Massachusetts Community Health Information Profile (MassCHIP), an Internet-accessible information service available from the Massachusetts Department of Public Health. Information about how to register as a MassCHIP user is available through the MDPH home page located at: <http://www.magnet.state.ma.us/dph/dphhome.htm>.

National BRFSS data: There is a national BRFSS website as part of the Centers for Disease Control and Prevention, which provides information about the BRFSS, includes listings of publications and questionnaires, provides national data on selected variables, and includes links to relevant websites. The national BRFSS website is located at: www.cdc.gov/nccdphp/brfss/.

Healthy People 2000 and 2010 website: The Healthy People Objectives has been coordinated by the U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Information on the health prevention goals, priority areas, measuring progress in the health indicators and other pertinent information can be found at the Healthy People 2000 homepage: <http://odphp.osophs.dhhs.gov/pubs/hp2000> or at the Healthy People 2010 homepage at: <http://web.health.gov/healthypeople/>.

ACKNOWLEDGEMENTS

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We wish to express our gratitude to the residents of Massachusetts who participated in this survey, and to Macro International and the dedicated interviewers who helped make this survey possible.

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